Teachers' professional learning: perspectives and reflections of practising teachers

Thesis

Teachers' professional learning: perspectives and reflections of practising teachers.

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Abstract

This thesis uses a case study to explore teachers' professional learning in one secondary school in the south of England.

An interpretive, qualitative case study approach was adopted. Data were collected using semi-structured interviews, questionnaires and staff biographies to explore the key research questions. These investigated how the teachers perceive their own learning and development, what teachers think they learn and develop and what activities impact teachers' learning and development.

A review of the conceptual frameworks focused on three different areas. Firstly, a consideration of how teachers and adults define their own learning. Secondly teachers' knowledge and skills base were explored; looking in particular at what authors argue constitute teachers' knowledge. Finally, there was an overview of the varied activities and experiences that affect and impact teachers' learning.

Analysis of the data indicated that secondary school teachers perceive their learning through the lens of acquisition and a new perspective described by participants as 'developmental'. The teachers in the study also showed that those who had been teaching for longer had different perceptions of learning from those with less experience.

A teacher's knowledge base was considered to consist of knowledge and skills related to the school, subject and personal efficacy of the teacher. The content of teachers' knowledge, however, was influenced by external factors such as policy and social changes in education.

Finally, the study found that teachers learnt from a wide range of formal and informal activities. Formal activities tended to be less successful if the aims were not shared and the teachers felt the learning was imposed. Informal activities were more successful as

they were normally instigated by staff with their own professional development in mind. Drawing together these findings the study proposes a new model of teacher learning.

Glossary

GTP	Graduate Teacher Programme. One of a selection of training programmes for training teachers leading to qualified teacher status based in schools. This programme ended in September 2013.
NQT	Newly Qualified Teacher. A first year teacher who is completing an induction programme having finished their teacher training.
OFSTED	Office for standards in education, children's services and skills. England's school regulatory body which judges the quality of education provision.
PGCE	Postgraduate Certificate of Education. A university and school based teacher training programme leading to qualified teacher status.
CPD	Continuing Professional Development: formal developmental opportunities within schools that are intended to promote teacher learning; sometimes referred to as CPDL (Continued professional development and learning).
HOD	Head of Department; a school middle leader.
SLT	Senior Leadership Team: The group of senior teachers that lead a secondary school.
TES	Times Education Supplement: A UK based magazine written for teacher audiences.
INSET	In service training: programmes and courses run by schools to promote teacher learning and development.
AFL	Assessment for Learning. A pedagogical technique used by teachers to assess learning in the classroom.
SEN	Special Educational Needs: students whose learning may need support.
IT	Information Technology: Computer equipment used in the classroom.

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CHAPTER 1 INTRODUCTION

Professional development for teachers has been at the forefront of a national agenda in England to improve the quality of teaching in schools (DfE, 2014). The origin of this study emerged from my frustration, as a practising teacher, with well-meaning but poor quality learning opportunities in a school in which I worked. This thesis seeks to explore the perceptions and experiences of teachers' professional learning with the case study of one secondary school. Section 1.1 outlines the detailed rationale behind this research.

1.1 Rationale for research

Having taught in secondary schools in England for over ten years (as a practising secondary school teacher and latterly as a senior leader), I wanted to research the impact of one school's training programme on the quality of its teaching. When exploring the literature, it became apparent that this was too wide a focus and, needing to refine, I looked at the concept of teacher learning and the activities that enabled teacher learning to take place.

As a teacher I have always been passionate about exploring how pupils learn. In contrast, I spent less time thinking about my own learning. As I reflected on my transition from trainee teacher through to experienced senior leader, I considered the many experiences, pupils and teams that have helped me to develop. Despite many years in the classroom, I felt I was still changing and refining the way I teach i.e. I was learning. Similarly, I wondered how colleagues viewed their own learning and how prominent their own learning was to them as they practised. Do they ever consider "what" they learn? Are there certain activities that teachers believe helped them learn? How are these activities linked to the people who practice around them? These questions linked to my role as senior leader, which is discussed further in my next paragraph.

I joined the senior team at King Henry School (KHS, a pseudonym) over six years ago and I was responsible for the quality of teaching and learning in my own department and across the school. Additionally, with other members of senior staff, I planned how teaching staff were supported to improve their practice. This could be by running formal training sessions or other activities that are intended to promote teacher learning. In my initial senior staff meeting, I was disappointed that most training sessions were generic and not specific to each teacher's needs. I felt that we did not take into account how the teachers' learnt or their prior knowledge, stage of development or how learning was embedded into their professional life (Opfer and Pedder, 2011). In contrast, meetings showed that senior leaders felt training was adequate and provided the necessary skills to improve. Evidence from our teachers' evaluations of professional development sessions were complimentary, but I knew that the evaluations did not express the whole truth; in the staff room I heard concerns that some training sessions were ineffective. In addition, classroom observations of teaching by senior leaders did not show the improvement in practice that purportedly would arise from good quality professional development. My concerns led to the choice of using KHS as a case study for this research.

In May 2010, a change in government in the UK, and a new Secretary of State for Education, led to the production of the white paper "The importance of teaching" (DfE, 2010a). Amongst other ideas, the white paper drew attention to the perceived link between the quality of teaching and the performance of pupils: 'All the evidence from different education systems around the world shows that the most important factor in determining how well children do is the quality of teachers and teaching.' (DfE, 2010a, p9). The report went on to state that 'it is important that] teachers receive effective

professional development throughout their career, with opportunities to observe and work with other teachers, and appropriate training for leadership positions' (ibid).

The white paper's focus on the importance of professional development made me further reflect on whether professional development at KHS was effective. At a later date during this research, the DfE produced a further consultation in 2014 that drew attention to the quality of CPD within schools (DfE, 2014). This confirmed my perception of teacher learning by claiming:

> Teachers report that far too much professional development is currently of poor quality and has little or no impact on improving the quality of their teaching. Too often "CPD" is viewed narrowly as attending courses or listening to stale talks accompanied by endless slides, padded out to fill INSET days. Teacher development is not always adequately focused on the specific needs (DfE, 2014, p10)

The DfE's claims rang true with my personal experiences as a teacher. In addition, the lack of connection between the senior team's plan to improve learning and the actual outcome (in terms of improved practice) emphasised to me the necessity in researching teachers' professional learning. This would ultimately allow me to engage with the teachers that I supported by understanding their perspective on their own learning which could allow me to comprehend how I could facilitate their professional learning and development. In addition, there was a need for this type of research, exemplified by Wilson and Berne (1999, p.204), who stated that 'few projects completed analyse what professional knowledge is acquired and fewer still explicated their theories on how teachers learned', and Fullan (1995, p.253) who explained that 'professional

development of teachers has a poor track record because it lacks a theoretical base and a coherent focus'. The work of both Fullan and Wilson and Berne (despite being over 15 years old) still resonated with the recent claims by the DfE (2014) and my own experiences.

The political context and my viewpoints as both a teacher and a senior member of staff catalysed my thoughts and motivated me to begin my doctorate with a focus, specifically, on teacher learning at KHS. The next section outlines how my thoughts and concerns generated the research questions.

1.2 Generating research questions

Initially my thesis was entitled "One school's drive to improve teaching; perspectives and reflections of practising teachers". I intended to investigate whether the professional development programme in the school allowed teachers to improve their practice and lead to better pupil learning.

My initial research questions included:

1. What is "good" and "outstanding" teaching?
2. What events occur that influence a teacher's teaching?
3. How effective are the different activities used to improve teaching?

The focus of my proposed research questions was wide and encompassed investigating different perceptions of teaching, finding out about activities that affected teaching and learning and then evaluating the activities that took place. Although I felt each aspect

worth investigating, I needed to narrow my focus to fit in with what was manageable within the time and taking account of all constraints.

Reflecting, I wanted a focus that could impact on both my practice and that of the school and the wider educational community. Researching teacher learning would fit this requirement as a better understanding of teacher learning would impact both school and individual practice. Using individuality as a starting point, I considered myself as a teacher; what would I want to know about a student to help them learn? A short list was generated:

1. What prior knowledge do my students already have?
2. How do my students feel they learn?
3. What methodologies can I employ in my classroom to promote better learning for my students?

The short list became the starting point for my research questions, with the focus shifting from students to practising teachers within the school. Additionally, exploring activities that promoted better teacher learning could subsequently inform and develop the quality of professional development within the workplace. The following research questions were then generated:

RQ1a. How do practising secondary school teachers conceptualise the terms 'professional learning' and 'professional development'?

RQ1b. How do practising secondary school teachers describe their own learning and development?

RQ2. What do practising secondary school teachers think they learn and develop?

RQ3. What activities impact secondary school teachers' learning and development?

The research questions then led to a consideration of the theoretical and conceptual framework that would underpin my study.

The structure of the thesis is that chapter 2 explores the literature that underpins this research whilst chapter 3 focuses on the methodological approach and the methods employed. Chapter 3 elaborates how this research is based on a case study of a secondary school in the East of England. Additionally, chapter 3 justifies how adopting an interpretive case study approach (using questionnaires and interviews) offers an insight into secondary school teachers' perceptions of learning and development. Chapter 4 combines both my findings and discussion and focuses on answering each research question, finishing with a new model of teachers' professional learning. The final chapter considers how this research adds to the current literature on teacher learning and impacts my role as a teacher and senior leader. It also discusses the potential impact for the wider education community.

CHAPTER 2 LITERATURE REVIEW

As described in chapter 1, the origin of this thesis stemmed from my interest in improving teacher learning in one school. To consider and improve teacher learning I wanted to investigate teachers' perceptions of their learning, the activities that they perceived improved their learning and the knowledge and skills teachers felt they learnt and developed.

The research questions were designed to explore both "how" and "what" teachers learn, and this shaped how the literature review developed. The "how" section discusses literature that outlines both conceptualisations of teacher learning and a review of the processes that lead to teacher learning. The "what" section of the review explores the literature that considers teachers' knowledge and skills. A thematic approach to the organisation of the literature review allowed overlap of key ideas that demonstrate the complex concepts that reinforce teacher's professional learning.

The literature review was carried out using academic search engines including Academic Search Complete, British Education Index and ERIC using the search terms "teacher learning" and "teacher development". The search looked for references to teacher learning through any type of experience, not just limited to formal experiences. Literature was selected if it attempted to define teacher learning, discussed the knowledge base of teachers or considered methods and processes that expanded teachers' knowledge and skills. Literature was also selected if it overlapped with workplace learning, contextualised the learning of professionals or focused on tacit or implicit learning in a school context.

The review is split into four sections, thematically based around the research questions and starting with a brief overview of the development of policy around teacher learning:

2.1 - A brief summary of key policy

2.2 - The conceptualisation of teacher learning

2.3 - How the literature views and categorises teachers' knowledge and skills

2.4 - Activities that impact on teacher learning

2.5 – A summary section that draws together the key themes from each literature strand and describes areas of incompleteness.

2.1 A brief summary of policy

This section briefly summarises how government policy behind teacher learning and development has changed over time. The inclusion of policy in this review helps to both contextualise teacher learning and justify how external factors influence learning in schools.

In 1972, the James report established a requirement for UK schools to conduct INSET to promote the learning and development of teachers (Robinson and Bryce, 2013). Schools and the government refocused on the CPD they were offering teachers. The creation of resources from both schools and the government resulted in a fragmented approach to provision, whereby the quality of learning depended on the CPD offer of each school and the individual's desire for self-improvement (Eraut and Seaborne, 1984).

The Education Reform Act 1988 catalysed changes in teachers' CPD. The evolution of formal, school-based programmes of study for teachers began with CPD sessions designed for INSET (Bolam, 2000). In 1997, teacher learning was the focus of the UK

government (DFEE, 1997) which led to the creation of the national strategies; formal programmes of support led by the government to improve aspects of teaching (like literacy and numeracy) in schools. The formation of the strategies led to statutory government CPD sessions to communicate the requirements of the strategies. Teachers were critical of how the policies were imposed on them and delivery was not always consistent as many teachers did not 'develop adequate understanding of the rationale and principles underpinning the initiative in order to sustain and develop it' (McNamara, Webb and Brundrett, 2010, p673). Despite teachers' criticisms, the strategies' imposition, through standardised training, led to greater consistency across schools in numeracy and literacy teaching (ibid).

A change of government policy (DFEE, 2001), further catalysed by the McKinsey report (2003), created an emphasis on school led, rather than nationally imposed, teacher learning. This happened through the rebranding of the Teacher Training Agency to the Training and Development Agency (TDA) with an expanded remit to include CPD as well as initial teacher training (Cordingley et al., 2003).

In 2010, following a change of government, the new Minister for Education gave a speech outlining his vision for the teaching profession (DFE, 2010b). He described how he would return both decision making and control of CPD of teachers back to schools. Bangs et al (2010) criticised this decision arguing that this would cause a lack of consistency across the teaching profession whereby the quality of learning opportunities would depend on the leadership of each school. The decision by the Minister to return CPD to schools created a similar position to the original James report; the quality of CPD depended on the leadership of the school. Four years later, as mentioned in chapter

1, the DFE (2014) produced a report which criticised schools for not planning teacher learning that encompassed teachers' needs.

The varying policies above show how changing political landscapes, with a cyclical nature of no state intervention → state intervention → no state intervention, have impacted teacher learning. Additionally, the removal of state intervention created disparity in the delivery of CPD in schools (DFE, 2014) which resonated with my experiences at KHS.

2.2 How do teachers learn? Conceptualising teacher learning

This section starts by presenting a brief historical view of how our understanding of learning has developed. This leads to a discussion of the literature's perspective of teachers' learning and different metaphors for teacher learning. A consideration of the conceptions of formal and informal learning then follows.

2.2.1 The historical development of theories of learning

In the early twentieth century behaviourism was the dominant theory of learning led by the work of Pavlov (1927), Skinner (1938) and Tolman (1932). These authors viewed learning as resulting from a stimulus-response interaction, as exemplified by Skinner's 'teaching machine' (Skinner, 1961, p. 381) that rewarded learners when answering a question correctly. Learning was evidenced by a change in behaviour. Running chronologically parallel to behaviourism was cognitivism. Kohler (1925) developed the theory of cognitivism, whereby experiences of the world can be condensed into components that can be learned as a form of information processing psychology. This differed from the view of learning as a type of behaviour.

Using cognitivism as a starting point, Bruner (1957) and Lewin (1951) proposed a theory of learning where a person's interactions with others developed new ways of interpreting the world. Lewin's field theory viewed learned behaviour as a sum of the unique components of their person and environment; simply, a person's learning is shaped and influenced by themselves, their families, their workplace and those who are part of their lives. In contrast, Bruner emphasises the social nature of learning and asserts that others experts are needed to help scaffold learning and facilitate the learning process. Both theorists shifted conceptually away from behaviourism with a focus on the importance of the learner: Lewin to an insight into the psychological field and context that surrounds each learner, and Bruner towards placing discovery at the centre of how students learn.

Following on, Piaget (1960) proposed that learners construct their own meaning and knowledge from personal experiences, which he called constructivist learning. A social dimension was added to Piaget's theory when combined with the historic work of Vygotsky (1978), who used the term "zone of proximal development (ZPD)" to describe how with a more "capable person" a person's learning could develop at a greater rate. A perspective re-emerged at this time - experiential learning. Experiential learning's original proponent, Dewey (1916), emphasised learning as a social and interactive process where he argued that 'if knowledge comes from the impressions made upon us from natural objects, it is impossible to procure knowledge without the use of knowledge which impresses the mind' (1916, p217). Later, Dewey (1938) proposed the view that learning begins with situations that present a dilemma for the individual, who then uses their experience to interpret various solutions. The learning that takes place is the change in cognition and behaviour that happens the next time the individual encounters the same (or similar) dilemma. Following on, Bandura (1977) emphasised that people learn from

each other, model key features of what they experience and he suggested that new knowledge arises from cognitive, environmental and behavioural influences. This form of social learning / social constructivism introduced ideas of self-efficacy where a person's self-esteem can affect how they learn.

Kolb (1984) developed Dewey's theoretical framework of experiential learning further. He synthesised a cycle of experience, reflection, conceptualisation and experimentation. He proposed that learners must be actively engaged in their experiences, able to reflect on what happened, able to conceptualise the experience and have the skills to problem solve and be creative with the new ideas gained from the experience. Personal reflection led learners to reconceptualise their own learning and experiment with their new knowledge. Kolb's work highlighted the need of experience and reflection in learning.

This summary is not intended to conflate over 80 years of epistemological views but to highlight the complex, changing and developing theories of learning. Additionally, most theorists focused on children's learning rather than adult learners.

Adult learning, particularly in the workplace, is explored further by a number of theorists including Eraut (2004), Argyris and Schön (1978) and Knowles (2005). Focusing on organisational learning, Argyris and Schön connect individual learning with that of the rest of the organisation. They emphasised both single and double loop learning, whereby experience leads to the modification of both individual (single loop) and organisational (double loop) goals. Although organisations have links to individual learning, the nature of the adult learner themselves cannot be underplayed.

Knowles (2005) introduced the concept of andragogy (adult learning) and compared it with pedagogy (child learning) emphasising how it was different:

1. The need to know: adult learners need to know why they are learning something and will explore the positive and negative reasons for doing so.

2. The learners' self-concept: adults have a concept of being responsible for their own decisions.

3. The role of experience: the richest learning, Knowles states, comes from experience, aligning with Kolb (1984) and Dewey (1938).

4. Readiness to learn: adults are ready to learn the things that they need to in order to cope with their day-to-day lives.

5. Orientation to learning: adults are motivated to learn if they perceive that the learning will help them confront problems they deal with in their lives.

Knowles' work is integral to this thesis as it demonstrates that adult learning needs a different approach to learning compared to that of children. Additionally, the features of adult learning, combined with the historical learning theories, suggest the following:

1. Learners can construct their own learning from personal experiences; experiences are needed for learning to occur. It is necessary to consider the formal and informal experiences that teachers have and how this relates to their learning.

2. Learners must be able to reflect on their experiences in order to create new ideas and solve problems. The literature underpinning reflection and its relevance to teachers must also be considered.

3. A capable person can help learners expand their knowledge base. This emphasises the importance of socialisation and other people in the learning of teachers.

In summary, many different theoretical frameworks are used to view learning: learning through experience, learning through self-construction and learning through socialisation. Theorists (such as Eraut, 2000) also suggest that much adult learning occurs in the workplace - this is important for this research in that it considers the learning of teachers in an English secondary school.

Having considered learning in general, and of adults, the next section will focus on defining teacher learning.

2.2.2 Defining teacher learning

The literature about adult learning in the workplace is extensive, and some 'teacher-learner' researchers (Vermunt & Endedijk, 2011; Hoban, 2002; Boulton Lewis et al., 1996) link concepts about work place learning to teacher learning, particularly Knowles (2005) and Eraut (2000, 2004).

The educational research community has developed many different conceptual models for both adult and teacher learning over the last 20 years (Evans, 2014). Additionally, in

the literature on work-based learning, the term ‘learning’ is contested. The complexity of theorising teacher learning hinges on the definitions emanating from the literature and developed by work-based learning theories. The literature seems to suggest two main metaphors to understanding teacher learning (Sfard, 1998):

1. Acquisitional learning metaphors – the concept that teachers have a deficit in their knowledge and learning helps solve the deficiency.

2. Participational learning metaphors – the concept that teachers’ learning is derived from participating in learning in their own workplace (experiences), reframing and solving any issues and then constructing their own meaning from their learning.

These two themes, which the discussed literature elaborates on, overlap and inter-relate in many ways.

Over the last 20 years in the literature on work place and teacher learning there is a consistent theme of learning as “change” (Smylie, 1995; Dadds, 2001; Eraut, 2004; Knowles, 2005; Lohman, 2006; Wilson and Demetriou, 2007; Jurasaite-Harbison and Rex, 2010; Pedder and Opfer, 2011). The term “change” is multi-faceted as it has many different definitions. The key concepts of ‘behaviour change’ and ‘involvement in activities’ are also present in the seminal literature; in particular Dewey’s (1938) theory of learning from experience and Lewin’s (1951) field theory.

Teacher learning is described as a development of a teacher’s cognition, knowledge and practice (Lohman, 2006; Wilson and Demetriou, 2007; Jurasaite-Harbison and Rex,

2010; Pedder and Opfer, 2011). In this context the term "development" is synonymous with change. If a learner develops then, it is suggested, they have changed from their original state. To illustrate further, Wilson and Demetriou describe learning as a 'growing capacity to make appropriate judgements in changing and often unique circumstances that occur in many workplaces' (2007, p214). The emphasis on the adjective and verb "growing" has similar connotations to the ideas of competency (Bruner, 1966). Bruner's work suggested that competence is about a learner's capacity to interact with others coupled with an ability to change one's personal environment. Simply, a teacher can demonstrate learning by being more competent at what they do. The term competent encompasses a wide range of skills and expertise. Lohman suggests that learning 'cultivates expertise' (Lohman, 2006, p142) and that learning results in the development of teachers' knowledge and skills through reflection and action. Expertise, again, is echoed in the work of Jurasaite-Harbison and Rex (2010, p267) who claim that 'teachers require various school based opportunities for learning to maintain professional growth'. Similarly, Hoekstra et al (2007, p.192) state that learning is 'being consciously or unconsciously involved in activities that lead to a change in behaviour and cognition'.

In contrast to previous literature, Hoekstra et al. (ibid.) explain that change is a neutral term in which learning may not necessarily be an improvement in terms of the educational norms advocated by others; for example a teacher may attend a formal course and learn techniques not supported by their workplace. This contradicts Jurasaite-Harbison and Rex (2010) whose term 'expertise' is used to correlate with how competently a teacher deals with their everyday practice. Accordingly, a neutral stance on change is more realistic than one that always correlates learning with a positive change. To view change fully, one has to consider whom the change and learning is for. If a secondary school wanted its teachers to learn about assessment for learning (AfL) in

the classroom, for example, many teachers may learn the AfL techniques and use them well whereas some may learn about the techniques and then not apply AfL successfully in their practice. In this example, the learning (as viewed by the school) would be ineffective.

Despite having proponents, learning as acquisition is contested as a simplistic metaphor for learning. The views of Sfard (1998), Hodkinson & Hodkinson (2003, 2005) and Illeris (2004) are similar to Hager whereby they compare and contrast different perspectives and metaphors for considering learning. Sfard considers how acquisitional learning could be viewed by seeing the human mind as 'a container to be filled with certain materials and the learner becomes the owner of these materials' (Sfard, 1998, p.5) which, like Hager (2004) is linked to a cognitive, acquisitional view of learning. Hager compares different metaphors of general workplace learning with learning as acquisition (Hager, 2008; 2004a; 2004b). When discussing learning as acquisition, Hager describes how, in an acquisition metaphor, knowledge consists of discrete objects that can be acquired by the learner over time (Hager, 2004a, p5). Elaborating this metaphor, Hager uses the work of Bereiter (2002) to illustrate how, from this perspective, learners are perceived to be empty vessels that need filling with knowledge. Hager criticises acquisitional learning due to an assumption that a learner has a 'deficit' and that learning is designed to 'fill' the deficit to make the learner competent (Hager, 2004a, p6). Furthermore, he summarises two main concerns with learning as acquisition. Firstly, acquisitional learning assumes that tangible knowledge is present to acquire. In addition to knowledge, skills must be easily decontextualized so they can be acquired and then transferred to diverse situations; solutions to practitioners' problems need to be made rational, then learnt and then put into action. Secondly, for professions such as teaching, acquisitional learning assumes a new teacher to have less skill or competence

than a teacher who has taught for a longer period of time. As Hager notes, the acquisitional view of a teacher learner is someone who has yet to be competent and strives to leave behind the role of a learner to gain expertise. The work of Hager aligns with Engeström (2001): Engeström describes how many types of learning in the workplace are different from models of acquisition. Focusing on both people and organisations, Engeström describes how learning is not always stable due to the changing nature in 'what' needs to be learned. If this is the case, Engeström describes how there can be no competent teacher (for learning) and new activities are 'literally learned as they are being created' (2001, p138).

This is developed further by Kelly (2006) who relates acquisitional learning to the experience of staff. Kelly asserts that it is not that more experienced staff have more knowledge but that the structure of their knowledge differs. Additionally, Kelly describes how knowledge is distributed across teachers and embedded in their social contexts and experiences - those who are more experienced have encountered more problems within their field. Solving the problems enables the more experienced teachers to understand typical patterns of interaction to be used again in future encounters. Novice teachers would need to build up experience and expertise by participating in learning communities (the participation metaphor for learning is discussed later in this section).

In both Kelly's and Hager's arguments there is an assumption that experience leads to expertise. It is over simplistic to assume that more experienced teachers are 'better' than less experienced teachers. The definition of teacher competence is more complicated, not necessarily linked to experience but aligning with aspects of life-long learning.

The term ‘life-long learning’ demonstrates that learning continues throughout a learner’s life. Hager (2008) argues that is it wrong to assume there is an end point to learning as this is an over simplification of the learning process and life-long learning. Boud and Soloman (2004) suggest the label of “life-long learner” has negative connotations; it could be taken to imply that a person is not yet effective in their role and therefore not yet competent. In the case of secondary school teachers, this would mean that an aspect of their teaching was not yet effective until they had acquired all the relevant knowledge. Boud and Soloman’s assertion is questionable as the term ‘life-long learning’ recognises that some individuals may choose to learn throughout their life (Skolverket, 2000). As, from experience, education constantly changes, some experienced teachers may view life-long learning positively. In order to keep up with the shifting expectations of teachers, experienced staff may consider themselves as life-long learners. Some may choose to improve or change their practice and embrace life-long learning voluntarily. Some may not want to change how they practice at all; linking to my earlier suggestion that not all experienced teachers are more competent. In addition, for those teachers choosing life-long learning, acquisitional models of learning may be appropriate as they continue to learn “new” things; countering Boud and Soloman’s argument of life-long learning being negatively viewed by some teachers.

Acquisitional metaphors are only one way to view learning and earlier in this review I elaborated how Hager discussed the portrayal of acquisitional “product” learning as less useful when viewing workplace learning (2004a, 2004b). The discrediting of acquisition as relevant to work place learning was a precursor to a discussion on other metaphors of learning such as participation metaphors (Sfard 1998) and viewing learning as (re)construction (which is considered later in this review) (Hager, 2008. Sfard contrasts acquisitional learning with a participation metaphor which in this thesis will be referred

to as ‘participational learning’. In her definition of participational learning, Sfard makes links to the work of Lave and Wenger (1991) on communities of practice, where ‘the learner should be viewed as a person interested in participation in certain kinds of activities rather than accumulating private possessions’ (Lave and Wenger, 1991, p.6). The teacher learner works alongside those who are experts and gains knowledge and experience from their practice (similar to Vygotsky’s zone of proximal development). Supporting Sfard’s illustrations of participational learning, Illeris (2004) states that learning involves processes that ‘include social interplay and individual psychological processing and acquisition’ (2004, p435). Overall, however, Illeris’ use of the term ‘acquisition’ and Sfard’s use of ‘expertise’ show that both acquisitional and participational forms of learning are not mutually exclusive. In fact, Sfard argues that acquisitional learning and participational learning are not dichotomous or hierarchical but are complementary. Viewing learning as acquisition leads to the perception of well-defined subject matter which is particularly pertinent for teacher learners. A wholly participational view on teacher learning would mean that the ‘whole process of learning and teaching is in danger of becoming amorphous and losing direction’ (Sfard, 1998, p10). Learning as acquisition or participation should be considered in partnership as both views of learning can have strengths and limitations for all groups of teachers. Illeris, for example, offers a warning about participational learning in that social processes may involve joint learning but will very rarely lead to joint outcomes. In addition, Pedder et al. (2005) argue that even in the most collegial of schools there are teachers who work alone, learn alone and ‘derive their most important satisfactions alone’ (2005, p221).

Learning can promote positive change, however the relationship between learning and change is far more complex than viewed as a simple cause and effect process. The

arguments of Knowles (2005) and Hager (2004a) evidence this further. Knowles acknowledges the complexity of defining learning and suggests three definitions:

> 1. The acquisition and mastery of what is already known.
> 2. The extension and clarification of meaning of one's experience
> 3. An organised, intentional process of testing ideas relevant to problems.
>
> (Knowles, 2005, p11)

Knowles' first definition acknowledges that learning can not only be related to acquiring knowledge but brings in the idea of mastery. Mastery is intrinsically linked to competence and suggests one has gained enough skills and knowledge to be an expert in one's field. The mastery in discussion here is defined as "mastery goals" (Dweck, 1986; Butler, 2000) rather than mastery learning. Mastery learning was developed by Bloom (1968) and originally focused on student learning and linked to a high level of understanding and application of a set of knowledge and skills (Guskey, 2009).

In contrast, mastery goals are focused on acquiring knowledge and skills to be more competent in practice. A key feature of mastery goals is the emphasis that difficulty completing a task should be an indicator to the learner that more learning is required. Implying that skills/knowledge were not present at first reinforces the use of the term acquisition.

Knowles' second and third definitions align with the ideas of Dewey (1938) and Schön (1983) incorporating ideas of construction and reflection to clarify meaning or solve a problem. From a school's perspective, Knowles' third idea is very similar to Schön's

theoretical framework based on reflection which is discussed later in this review. My criticisms of the definition two and three include:

1. Definition two assumes that learning leads to an experience becoming clearer. New knowledge or experience may further cloud understanding of an issue.

2. Definition three assumes a problem can be solved. As Beckett and Hager state 'once a problem has been specified, it may not fit standard categories… as well, the problem situation may be unique or unstable. This may require that the problem is continually refined' (2002, p132).

At this stage the literature diverges. A tension exists between both dominant perspectives of learning; acquisitional and participational. Viewing learning as acquisition can be simplistic, disregarding the context of learning or the messiness of situations and viewing all knowledge as fixed and learnable. Participational learning incorporates the social aspects of learning, the workplace (particularly the context), and the environment but cannot be defined without clearly incorporating an aspect of acquisition or improved expertise.

Theorists such as Hager (2008) and Sfard (1998) have brought together the different metaphors of learning without specifically focusing on teacher learning. Teacher learning could be a combination of both metaphors; not simplistic but yet still tangible.

In the final part of this section I will return to Hager and compare his research to literature on teacher learning (Kelly, 2006; Hodkinson & Hodkinson, 2005).

Hager, echoing Knowles, summarises workplace learning from a third perspective; that of '(re-) construction' (Hager, 2004a, p15). Hager's re-construction metaphor views learning as a process which takes into account social, cultural and political dimensions. Learning 'redefines existing rules' and 'involves the creation of new learning that simultaneously shapes the environment in which learning occurs… the process and product of learning are inextricably linked' (Hager, 2004a, p15). The re-construction of meaning from the learning is focused on the learning, the learner and the workplace. Additionally, Kelly suggests that teachers' knowledge in practice used elements of construction whereby 'those involved [in learning] internalise their experience of participation' (2006, p510), emphasising how teacher learning is directly affected by what happens in the classroom. Later work by Hager supports Kelly's suggestion by asserting that what is being learnt changes continually 'as each learner constructs/re-constructs their own evolving understanding of it' (2008, p684). Other authors support the use of construction, for example Hodkinson & Hodkinson (2005) who undertook a longitudinal study of teacher learning in the workplace. Their results supported aspects of both Hager and Sfard's arguments, whereby teacher learning could be viewed as an amalgamation of participational and re-construction perspectives. The authors stated that 'a combination of construction and participation provide a way of understanding learning that best fits the current research evidence and is most likely to maximise possibilities for improving teacher learning in future' (Hodkinson & Hodkinson 2005, p.111).

Combining literature themes, the workplace learning literature emphasised learning through participation in every day practices and the teacher development literature discussed the individual processes of construction (Hodkinson & Hodkinson, 2005,

p.128). The authors conceptualise teacher learning as complex and participatory, developed through everyday practices in the workplace.

2.2.3 Summarising teacher learning

Teacher learning can be viewed in a variety of ways:

1. Learning as acquiring new knowledge or skills.

2. Learning as growth or development whereby a teacher gains expertise.

3. Learning as problem solving where a teacher learns by experiencing tension or discord in the workplace.

4. Learning through participation and re-construction which is distributed across a community and tightly linked to situation and context.

From my perspective, each definition has its place in teacher learning. Viewing learning as acquisition can be suitable for a teacher; for example, the government guidelines on child protection are statutory and have to be applied uniformly in each school. Teachers will encounter problems that they will attempt to solve and they can do this from learning from their own experience or from participating in workplace learning and practice. Teachers need both propositional and procedural knowledge to understand their specific workplace and so they can interact with their peers. Teachers need to construct their own meaning of the interactions that happen with them and to them.

A common view across all the literature is that all these examples of teacher learning lead to development. Development leads to growth. Growth is described in terms of

expertise and being more competent. Regardless of the strengths and weaknesses of each learning metaphor, effective teacher learning is about making teachers better at what they do or 'coming to understand things and developing increased capacities to do what one wants or needs to do' (Schoenfeld, 1999, p6).

2.3 "What do teachers learn?" The teacher's knowledge base

Section 2.2 considered different conceptions of how teacher learning can be portrayed. This section now considers what teachers learn.

2.3.1 Conceptualising teachers' knowledge base

A teacher's knowledge base is not easy to define and different definitions can lead to different approaches to facilitating teacher learning (Cochran-Smith and Lytle, 1999). Throughout the literature there are similarities and differences between each conception of a teacher's knowledge base and its composition (Shulman, (1986, 1987); Borko and Putnam, 1995; Banks et al., 1999; and Cochran-Smith and Lytle, 1999). Shulman (1987, p8) describes seven categories:

1. Content knowledge – The "what" which needs to be taught by teachers. This could be considered to be the subject knowledge, for example, in Science.

2. General pedagogical knowledge – the strategies and principles of how the classroom in managed and organised.

3. Curriculum knowledge – this is similar to content knowledge as it encompasses specific content but is different in that it is related to the context in which it is being taught. For example, university chemistry would have different content knowledge to secondary school chemistry.

4. Pedagogical content knowledge – described as an ‘amalgam of content and pedagogy’ (ibid.) where it considers the way in which the specific content is taught to students.

5. Knowledge of learners and their characteristics.

6. Knowledge of educational contexts – ranging from the character of the communities that the teacher teaches in to the governance of the particular school community.

7. Knowledge of educational ends, purposes and values and their philosophical and historical grounds – this infers knowledge about the theoretical underpinning of learning and the values that has created these.

Shulman does not attempt to present the evidence he uses to create these seven categories and he confesses that he has not used ‘cross article consistency’ (Shulman, 1987, p.8) when he has referred to the groups in previous research. This suggests how his thoughts on teachers’ knowledge base continue to alter throughout his research. Shulman argues that ‘one of the most important tasks for the research community is to work with practitioners to develop codified representations of the practical pedagogical wisdom of able teachers’ (Shulman, 1987, p.11). Later he states that ‘one of the frustrations of teaching [is] the consistency with which the best creations of its practitioners are lost to both contemporary and future peers’ (ibid.). These two statements appear at odds with each other as Shulman is arguing for a bank of practice-based case studies to share with new teachers but then also acknowledging that

sometimes practitioners cannot make their ‘best creations’ explicit to others (ibid.). If best practice cannot be made explicit then other practitioners may not be able to learn from these experiences.

In contrast to Shulman’s work Cochran-Smith and Lytle (1999) suggest three concepts for describing what teachers learn:

1. Knowledge-*for*-practice.
2. Knowledge-*in*-practice.
3. Knowledge-*of*-practice.

Knowledge-for-practice is described as ‘formal knowledge and theory’ similar to Shulman’s seven categories forming a knowledge base (Cochrane-Smith and Lytle, 1999, p250). The authors suggest that this type of formal knowledge is linked to teachers’ professional identity where teachers need a fixed body of knowledge to initiate those into the profession (Cochran-Smith and Lytle, 1999, p255). Arguing against codified categories, the authors point out the ‘limitations of propositional knowledge as a guide to practice and insist that teachers do not use knowledge one domain at a time but rather meld knowledge from many domains as they make judgments and reason about what to do in a particular context.’ (Cochran-Smith and Lytle, 1999, p257). Cochran-Smith and Lytle are not disputing the existence of formal knowledge within a teacher’s knowledge base but highlighting its complexity and necessity for practising teachers. They also acknowledge the importance of a formal knowledge base whereby ‘Teachers implement, translate, use, adapt and/or put into practice what they have learned of the knowledge base’ (ibid.). This leads onto the concept of “knowledge-in-practice”.

Knowledge-in-practice is not clearly defined by the authors and despite using the word "knowledge" Cochran-Smith and Lytle inter-change knowledge with the words like "skill" and "artistry". The authors link this concept to the work of Schön (1983, 1987), discussed in section 2.2.1, where 'there is knowledge implicit in action and artistry - that artistry itself is a kind of knowing.' (Cochran-Smith and Lytle, 1999, p.265). In further attempts to elaborate "knowledge-in-practice" the authors use the term "practical knowledge" which is developed as a result of experience and reflection in the classroom. Experience allows teachers to use their new knowledge in the classroom to decide on 'action in the midst of uncertain and changing situations' (ibid. p.266). In contrast to knowledge-for-practice and the proposed knowledge base of Shulman (1986, 1987) knowledge-in-practice focuses on the "knowing" of what works in the classroom. It is embedded in practice and from reflections of practice (Cochran-Smith and Lytle, 1999, p.250). To develop this part of the knowledge base would require a teacher to be in the action of the classroom and learn from others who have had experiences. Teachers, therefore, learn by practising and by learning from 'expert' teachers and it is those teachers who hold the knowledge that new teachers may learn from (Cochran-Smith and Lytle, 1999). Cochran-Smith and Lytle assume that the expert who contains the knowledge can easily transfer the knowledge to the less experienced teacher. This assumption underplays the complexity of situated knowledge, in particular the tacit nature of knowledge which is discussed later in this section.

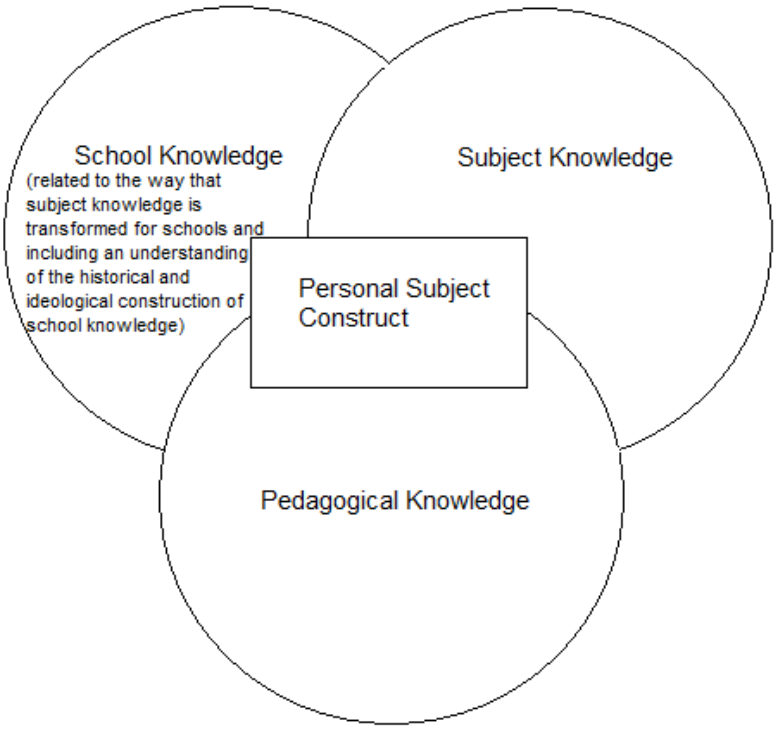
The final strand "knowledge-of-practice" considers teachers as researchers whereby teachers learn and develop their knowledge from investigating practice in the classroom. This is different from "knowledge-in-practice" as it is based on intentional investigative work that allows teachers to theorize and construct their own knowledge from local

contexts. This concept theorizes that a teacher's knowledge base is self-constructed rather than a set of information to be learnt. According to Cochran-Smith and Lytle (1999), the concept of self-inquiry is what distinguishes this type of learning from practical knowledge and formal knowledge.

In addition to Cochran-Smith and Lytle's work, Borko and Putnam (1995) and Banks et al. (1999) explore the idea of a formal knowledge base further. Borko and Putnam build on aspects of Shulman's work by acknowledging that a teacher's knowledge underpins their actions in the classroom. The authors use a cognitive psychological approach to justify this by stating that 'to understand teaching we must study teachers' knowledge systems; their thoughts, judgements and decisions' (Borko and Putnam, 1995, p.37). Secondly the authors (like Cochran-Smith and Lytle, 1999) argue that, unlike Shulman's categories of a teacher's knowledge base, many teacher knowledge categories are interrelated and overlap, for example 'a teacher's knowledge about how students learn, … are intertwined with his or her knowledge of instructional strategies' (Borko and Putnam, 1995, p.39). Borko and Putnam also offer a further concept which they entitle 'overarching conception of teaching a subject' (1995, p.47), which they describe as a teacher's perception of how they should teach based on their previous experiences and learning. This aligns with Cochran-Smiths and Lytle's "knowledge-in-practice" whereby the practical nature of the profession is considered.

Concurrent with the literature discussed above, the concept of teachers' professional knowledge is also explored by Banks et al. (1999).

Figure 2.1 Teachers' professional knowledge (adapted from Banks et al., 1999)



Banks et al. (1999) also build on Shulman's (1986, 1987) work. The idea of "personal subject construct" which Banks et al. describe as a 'complex amalgam of past knowledge, experiences of the learner' (1999, p.95) is similar to that of the 'overarching concept of teaching a subject' by Borko and Putnam (1995). Banks et al. developed a diagram (see figure 2.1), using the categories outlined by Shulman (1987) and Borko and Putnam (1995). The diagram consists of three sections:

1. Pedagogical knowledge (incorporating general pedagogical knowledge, pedagogical content knowledge and knowledge of educational aims from the models of Shulman (1987) and Borko and Putnam (1995)).

2. School knowledge (incorporating knowledge of students, knowledge of curriculum and knowledge of other contexts from Shulman (1987)).

3. Subject knowledge (incorporating knowledge of subject matter from Shulman (1987) and from Borko and Putnam (1995)).

Banks et al. are critical of Shulman (1986) who they argue is influenced by 'objectivist epistemology' (Banks et al., 1999, p.91) which renders his views of knowledge as fixed and contained. This is similar to Cochran-Smith and Lytle's criticism of 'formal knowledge' and knowledge-for-practice (Cochran-Smith and Lytle, 1999, p.261). I argue that Banks et al. and Cochran-Smith and Lytle's criticism of objectivist considerations of the teachers' knowledge base underplay the importance of formal knowledge. Teachers will always need knowledge that is fixed, for example, a specific code of practice associated with child protection and safeguarding, knowledge of a behaviour framework and specific content to be taught from a national curriculum. This codified propositional knowledge will have to be acquired for the teacher to use in their role. The limitation of some codified knowledge is that it is linked to the context in which it is learnt.

In addition to their previous arguments, Banks et al. also criticise Shulman for focusing on teacher learning rather than the process of learning itself. They exemplify their own model by using case studies and applying the results of these studies to their model. They conclude that the model illustrated in figure 2.1 is meaningful to 'assist in the articulation of teacher's professional knowledge' (Banks et al., 1999, p.109).

In summary there are differing views of the composition of a teacher's knowledge base. There are areas in which the literature overlaps, in particular the need for practical experiences and the existence of a "formal" professional knowledge base. The models'

weaknesses are that each domain of knowledge appears to be of equal value; there are no indicators of which domain is the most important or significant to the teacher. Even though there are many aspects of a teachers' knowledge, a teacher will not have the capacity to develop all aspects at once. A teacher may well value one domain over another.

Across the literature, there are three categories of professional knowledge common to all theorists:

1. General teaching knowledge – secondary school teachers need to know the theoretical concepts which affect teaching, how to interact with learners (including behavioural management techniques and dealing with misconceptions) and manage a classroom environment.

2. Subject and pedagogical knowledge – secondary teachers need a knowledge base of what they are going to teach (i.e. their subject), knowledge of what they need to teach (for example the curriculum within their school) and how they are going to teach it (how they will turn their subject knowledge into something that is accessible for their learners).

3. Local knowledge – this refers to local factors such as the school curriculum, school expectations and political, regional and national decisions.

Whilst this disaggregates teachers' knowledge in order to describe it, in practice these aspects of knowledge are complex and interrelated. The complexity of "what" teachers

learn make this research interesting; as Wilson and Berne state ‘the "what" of teacher learning needs to be identified, conceptualized, and assessed’ (1999, p.203).

2.3.2 Practical skills; competence and tacit knowledge

The models of teachers’ knowledge and skills considered in section 2.2 consider formal, propositional knowledge alongside more informal knowledge. This section focuses on the parts of teachers’ knowledge base that are more implicit. Teacher knowledge does not just consist of discrete areas to learn but instead is tied firmly into a socio-cultural perspective (Opfer and Pedder, 2011). To understand teacher learning (or to be a teacher in a particular school) we must ‘consider what sort of local knowledge, problems, routines and aspirations shape and are shaped by individual practices and beliefs’ (Opfer and Pedder, 2011, p.379).

A teacher, new to a school, has yet to learn the practices and procedures that are inherently embedded in that particular context. Some procedures are explicit, for example, how to take the register. Some of the knowledge and practical skills are tacit and implied and learned through experience. As a teacher becomes more expert ‘their actions tend to rely on automated, embodied and intuitive knowledge which is almost procedural in character’ (Wilson and Demetriou, 2007, p216). Being an expert or being more competent is described in section 2.2.2 and is contested in the literature. Expertise and tacit knowledge may not come with experience and depends on how the teacher navigates a particular context or challenge. Each workplace may have different social norms and expectations that are learnt in different ways (Wilson and Demetriou, 2007; Eraut, 2004). Eraut defines this knowledge as personal knowledge. Discussing general adult learners (rather than teachers) Eraut asserts that tacit knowledge is linked to performance; competent learners act in a more rapid, routinised, intuitive manner. Similarly, Westera defines competence as the ‘effective use of knowledge in specific,

usually complex, contexts' (2001, p79). Westera's definition supports the argument that competency is related to context but does not argue about the portability of the knowledge. In other words, if a teacher is competent would they be able to cope with all contexts? Simply, no; both Eraut and Westera argue against the use of competency standards as a teacher's competence in one school may not translate to a different school, context or situation.

If a teacher were to move to another context then their competency may change. Aspects of their training and skills may be transferable but some parts may be context-specific: for example, a particular policy for homework or behaviour management. The teacher would need to learn, through others, the tacit knowledge of the new culture. The very nature of tacit knowledge assumes that knowledge accumulates through experience (Toom, 2012). Toom, however, admits that assuming experience results in tacit knowledge oversimplifies the complexity of the tacit nature of local knowledge. Tacit knowledge is not just about understanding a context, it 'encompasses embedded beliefs, attitudes and values… it is partly knowable… it is partly individual… but also connected to context… neither dimension excludes each other but they exist in mutual relation' (Toom, 2012, p640). Both Toom and Westera acknowledge the complexity of developing teachers' tacit knowledge but do not exemplify how tacit knowledge is different for teachers of different experiences. Even though tacit knowledge is described as complex, schools still need to be able to help teachers develop this area of their skills' base.

2.3.3 Summarising teachers' knowledge and skills

Teacher's knowledge and skills can be outlined using a spectrum as a model. On one end there is a distinct base of propositional knowledge that teachers can acquire. Examples could be: using school register systems; knowledge of key parts of the curriculum and

key behaviour techniques. Propositional knowledge may be generic or specific to a context but is codified for learning. Linking with section 2, propositional knowledge is modelled as knowledge that can be acquired. On the other end of the spectrum, there are areas of knowledge that overlap with skills and not only develop over time but are intertwined with context: an individual's belief, attitudes, values and experience. Examples are how a teacher can control one class whilst others struggle or how a teacher picks, intuitively, a pedagogical model to teach a particular concept. In between propositional and skills-based knowledge are the areas that are more difficult to conceptualise. A teacher can learn key aspects of pedagogy, for example, how to scaffold a concept in Science, but the scaffold will be different for different contexts and situations such as a class of different pupils or teaching in a different school.

Understanding the contrasting views of teachers' knowledge offers an insight into the complexity of teacher learning. Furthermore, knowledge of *what* a teacher learns can inform activities that promote teacher learning. Section 2.4 considers the types of activity that affect teacher learning.

2.4 Activities that impact teacher learning

So far sections 2.2 and 2.3 have considered the conceptualisation of teacher learning and what teachers' knowledge consists of. This section of literature turns to the activities that affect the learning and development of teachers.

2.4.1 Comparing and contrasting formal and informal learning activities

Section 2.2 outlined two perspectives to consider teacher learning: a cognitive psychological perspective of learning as acquisition of explicit knowledge versus learning as participation through various social or individual experiences. This sub-section intends to consider both the activities that can be described by the umbrella term

of "professional development" as well as informal, unplanned activities that occur in a teacher's workplace.

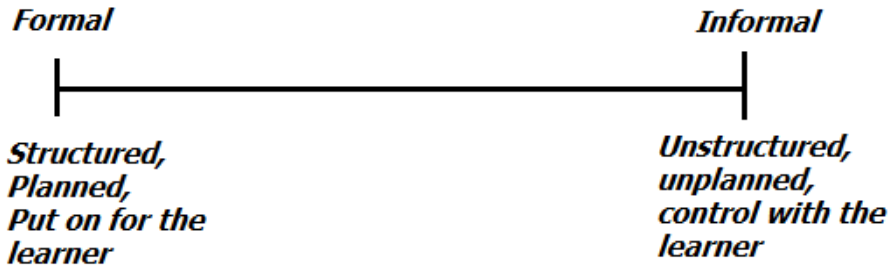
The literature is largely in agreement in that teachers' professional development and learning experiences in the workplace can be varied (Hodkinson & Hodkinson, 2005) and can involve both formal and informal learning processes (Green & Ballard, 2011; Hoekstra & Korthagen, 2011; Opfer & Pedder, 2011; Pedder & Opfer, 2011; Vermunt & Endedijk, 2010; Desimone, 2009; Hoekstra et al. 2007, Marsick et al. 2006; Kwakman, 2003). In addition, Borko states :

> 'For teachers, learning occurs in many different aspects of practice, including their classrooms, their school communities, and professional development courses or workshops. It can occur in a brief hallway conversation with a colleague, or after school when counselling a troubled child. To understand teacher learning, we must study it within these multiple contexts, taking into account both the individual teacher-learners and the social systems in which they are participants' (2004, p. 4).

Occurring regularly in the literature are the terms "formal" and "informal" learning. Hoekstra et al. (2007, p.191) regard formal learning as 'organized activities [that] are consciously undertaken by teachers with the intention to learn' and informal learning as being 'where no programme or structure for learning is explicitly organized by external actors and learning takes place through engagement in work activities'. To Hoekstra et al, defining an activity as formal or informal depends on the type of activity that takes place. Marsick et al.'s definition of formal workplace learning is similar to Hoekstra et al.'s in that 'formal learning is typically institutionally sponsored, classroom-based, and

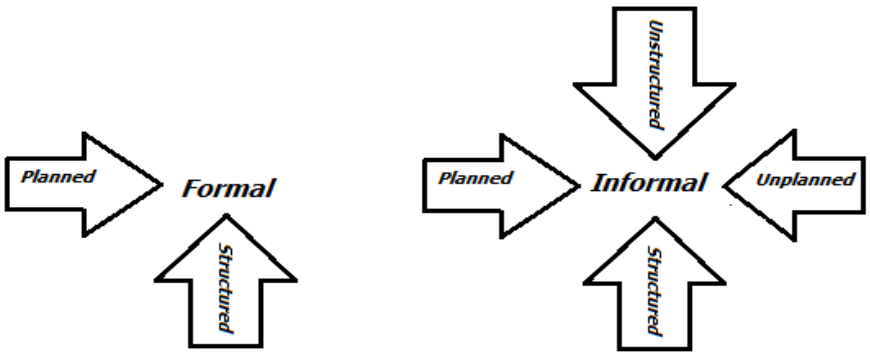
highly structured' (2006, p195). The reference to 'classroom' in her definition is to highlight the formality of the learning for non-teachers rather than a reference to the workplace of teachers' themselves. In contrast, informal learning activities are described as unplanned, not highly structured and where 'the control of the learning rests primarily in the hands of the learner' (Marsick et. al. 2006, p.795). Marsick's dichotomy is illustrated in figure 2.2.

Figure 2.2: Marsick et al.'s view of learning activities



Marsick et al.'s model oversimplifies learning and does not take into account informal learning that could be planned; for example, teachers observing their peers informally. Lohman (2006) views the terms differently, defining the learning in terms of key features rather than as a dichotomy. Lohman's perspective, expressed as figure 2.3 shows that informal activities can have planned and structured elements. For example, a teacher could watch a colleague informally and structure their observations around their particular learning needs.

Figure 2.3 Lohman's view of learning activities



Comparing Lohman and Marsick et al.'s models one finds there is agreement of key features of formal learning activities; particularly the emphasis of formal learning activities being planned and structured. The types of activities that are incorporated in this category are classified by other research as formal professional development (Cameron et al. 2013; de Vries et al. 2013). In contrast, informal learning is viewed differently by both Marsick et al. and Lohman. As the diagrams illustrate, Lohman describes informal learning that can be both planned and unplanned whereas Marsick et al. emphasise the planned nature of formal learning as what makes it distinct from informal learning.

Other authors' discussions on workplace informal learning and teacher informal learning focus on the 'absence of any programme or structured organised for learning' (Hoekstra et al., 2006, p.189) or programmes that 'are not formally assessed and does not lead to formal qualifications' (Le Clus, 2011, p.363). Bruce, Aring and Brand (1998) suggest that over 70% of learning that occurs in the workplace is informal; describing situations such as team meetings, mentoring and peer-to-peer interactions as examples of informal learning experiences. The emphasis on a person's experience links back to Dewey's (1938) theory of experiential learning discussed in section 2.2.1 (p10).

Eraut (2004, 2007) considers informal learning in more depth and formulates three categories of informal learning for generic learners:

1. Deliberative learning – this is described as planned, informal learning where the teacher has taken time to consider something in their practice, reviewed their past actions (reflection) and engaged in activities to problem solve.

2. Reactive learning – this is near instantaneous reflection (similar to Schön's (1983) reflection-in-action) where teachers adjust, during their practice, observe the outcome and if it is not expected then they may reframe or abort the activity (Hoekstra et al., 2007).

3. Implicit learning – This is when a teacher learns from repeated experiences that have similar outcomes, the 'implicit linkage of past memories with current experience' (Eraut, 2004, p.250). In other words, the teacher's actions in the classroom are based on what worked for them in previous experiences.

Implicit learning is similar to knowledge-in-practice (Cochrane-Smith and Lytle, 1999) and is highly contextualised as it is based on the experiences of the teacher with a particular class and with a particular school. These experiences, however, over time build up to create a useful body of implicit knowledge.

In summary both formal and informal learning have overlapping characteristics. This is particularly true when considering whether an activity is planned or not. The characteristic that is distinctive between each type of learning is the outcome – with

formal learning the outcomes are pre-determined by others, whereas with informal learning the outcomes are determined by the learners themselves and are sometimes serendipitous.

The next sub-section considers the types of activities that are discussed in the literature on teacher learning.

2.4.2 Activities that promote teacher learning

The literature was loosely sorted into reports of formal and informal activities *if the research was labelled as such* and table 2.1 was created:

Table 2.1: Key teacher learning activities from the literature

Activity	**Literature**	**Classified; Informal/formal (if mentioned in literature)**
Talking with others e.g. discussions in department meetings, in the corridor, in performance management meetings.	Lohman (2006) Eraut (2007) Meirink et al. (2010) Wilson and Demetriou (2007) Opfer and Pedder (2011)	Informal Formal / Informal
Collaborating or working with others e.g. team teaching other classes, completing activities in department meetings (like writing schemes of work, planning lessons, standardisation)	Lohman (2006) Eraut (2007) Hodkinson & Hodkinson (2003, 2005) Kelly (2006) Meirink et al. (2010) Wilson and Demetriou (2007) Rytivaara and Kershner (2012) Opfer and Pedder (2011)	Informal Informal
Observing others e.g. watching others teach; as part of own development or as a mentor or part of a formal process.	Lohman (2006) Wilson and Demetriou (2007)	Informal
Journals/Internet	Lohman (2006) Wilson and Demetriou (2007)	Informal Informal
CPD courses e.g. courses attended that lead to specific learning outcomes both in and out of the workplace.	De Vries (2013) Akiba (2012) Opfer and Pedder (2011) Wilson and Demetriou (2007)	Formal Formal
Classroom experience e.g. everyday individual classroom teaching	Hoekstra et al. (2007)	Informal
Performance Management e.g. formal meetings about targets and progress	Opfer and Pedder (2011)	Formal

Table 2.1 formed a useful tool for categorising learning activities as formal and informal and also gave rise to key teacher learning activities. The following subsections considered the key themes identified from the literature, namely:

- Formal CPD courses
- Collaborative activities with colleagues
- Lesson observations
- Everyday classroom practice
- Reflection

Formal CPD courses

In schools, formal CPD courses take place either on or off the school site. These courses usually emphasise learning as acquisition (Hodkinson & Hodkinson, 2003) and are activities that are designed to promote teachers' knowledge and skills away from their work (i.e. not whilst in the classroom) (Hustler et al. (2003)). Earley & Bubb (2004), Lipowski et al. (2011) and Czerniawski (2013) distinguish formal CPD activities from other types of learning. The authors describe the difference by stating that formal activities are intended to address the goals of the school and informal activities are led by the direction of the staff.

Research on formal learning activities are mainly critical, with concerns focusing on the specific features of formal CPD including:

1. The focus on piecemeal, linear attempts at learning disregards cyclic, intensive views of development and the requirement that learning needs intensive time to embed into practice (Smylie, 1995; Desimone, 2009).

2. The activities are sometimes fragmented and not differentiated for teachers' abilities (Lieberman and Pointer-Mace, 2008; Hoekstra and Korthagen, 2011) and fails to deliver the 'personalised nature of teaching' (Day, 1999, p94).

3. From a social-cultural perspective, formal CPD decontextualizes and de-situates learning from the classroom making the learning less portable for teachers to apply in their own situation (Putnam & Borko, 2000; Korthagen, 2010; Rytivaara & Kershner, 2012).

In contrast, Day (1999), Hodkinson & Hodkinson (2003) and Hustler et al. (2003) highlight some positive aspects, including:

1. Formal courses such as master degrees have a positive impact on the learning of the attendees and a 'lasting influence on the ways in which teachers understand, see and approach their work' (Hodkinson & Hodkinson, 2003, p117).

2. Short courses can be made effective if teachers value the activity that takes place and (if run by a colleague) provides an insight into the expertise available in the school. The content of the courses have a greater impact if taken back to the classroom and developed further.

3. Courses, external to the school, are valuable if they promote contact and collaboration with teachers and others 'in related but different situations' (Hodkinson & Hodkinson, 2003, p117).

Talking and collaborating with others

Defining learning in section 2.2 led to two key conceptions of learning; learning as acquisition and learning through participation. Several theorists including Sfard (1998) and Hodkinson & Hodkinson (2003, 2005) consider participational learning as learning which occurs when participating in social or communal activities. In a similar vein, Lave and Wenger (1991) propose that learning occurs in communities of practice. Using apprenticeship models to illustrate their concept, Lave and Wenger elaborate how adult learners learn from experienced practitioners in their workplace in order to become more competent and part of the community of practice. Critically, this theory assumes that those whom the novices work with are more competent and that socialisation is key for tacit practical knowledge to be transferred to new workers. Kelly (2006) argues that experienced practitioners do not simply have more knowledge than new teachers; their 'representation of phenomena are accurate and inclusive' (2006, p508). More experienced teachers know what to do when faced with different problems. Experienced teachers are used to the context of the school they work in and therefore understand both the expectations of the school and what works in the classroom.

Hodkinson & Hodkinson describe the difficulty in separating the learner and their context; 'It is not just that each person learns in a context; rather, each person is a reciprocal part of the context, and vice versa' (2003, p4). What Lave & Wenger and Kelly have in common with Hodkinson & Hodkinson is the promotion of the social dimension of learning; particularly working, talking and collaborating with others who are more expert.

Teachers regard collaborative activities as a 'powerful learning environment' (Meirink et al, 2010, p161) where they can discuss issues concerning their practice with colleagues.

The literature on collaborative informal activities shows agreement in their importance in promoting teacher learning (Hodkinson & Hodkinson 2003, 2005; Lohman (2006); Eraut (2007); Wilson & Demetriou (2007); Meirink et al. (2010); Opfer and Pedder (2011); Rytivaara and Kershner (2012)).

Lohman (2006) explores types of informal learning activities further. Using Likert scales teachers were asked about the types of learning activities they engaged in. The following were the top three:

1. Talking with others.
2. Sharing materials and resources with others.
3. Collaboration with others.

A criticism is the use of the term "others". This research does not elaborate who the others are or even what "collaboration" with others entails. Teachers could work with colleagues, line managers, parents and students; leading to learning emanating from different sources. For practitioners, understanding who the "others" are would offer a unique perspective. Additionally, Lohman's work was restricted to numerical data prohibiting the identification of why these activities were so effective.

Other research offers an insight into whether collaborative activities have an impact on teacher learning. Cordingly et al. (2005) reviewed the impact of collaborative practice on student achievement and found that collaborative learning practices produce changes in teacher cognition which correlate with increased student achievement. Similarly, a longitudinal study on nurses, engineers and accountants by Eraut found that working alongside others allowed learners to 'become aware of different kinds of knowledge and

expertise, and gain some sense of other people's tacit knowledge' (2007, p409). Despite Eraut's work not being teacher specific, part of his findings are relatable to schools. If teachers are in a team and involve participation in group processes towards shared goals, then they can gain technical knowledge specific to a particular context e.g. a Science department discussing and planning aspects of a brand new curriculum.

Collaborative activities could be required as well as voluntary; formal as well as informal. It is how the collaboration is set up that affects the impact on teacher learning. Shared goals and a sense of community are part of the conditions that allow collaborative learning activities to be effective in promoting teacher learning. Other key features of effective collaborative learning activities include spontaneity, and that the activities are voluntary, development-orientated and unpredictable (Hargreaves, 1994). Collaborative activities encompass and help teachers learn both knowledge-in-practice and knowledge-of-practice (Cochran-Smith and Lytle, 1999). Hargreaves also highlights key (but subtle) learning activities such as 'passing words and glances, praises and thanks, offers to exchange classes, informal meetings about new units of work, sharing of problems or meeting parents together' (1994, p193).

Hargreaves offers a warning about collaborative activities in that some can be contrived. Using examples such as formal joint planning time, peer coaching and mentoring meetings, he highlights the compulsory, regulated approach to these learning activities in some instances affects the effectiveness of the learning. He summarises that the facilitation of the learning activities by managers is more effective than the control of the outcomes of the activities. Hargreaves argues that the task outcomes should be controlled; not the time taken. This would allow teachers to be held accountable to the outcomes not 'obedience in their use of time' (1994, p200). Hargreaves oversimplifies

the complexity of some types of collaboration. Despite being formal in nature, some compulsory collaborative activities may have elements of informality. A mentor meeting may include specific items for discussion but informal discussions post-meeting could also impact the teacher's learning.

Further criticism of collaborative activities comes from Hodkinson & Hodkinson (2003) who state the quality of the learning in collaborative activities depends on the culture of the community. In their example of a secondary school Art department they found that the collaborative learning opportunities that took place encouraged high quality learning to happen because of the cohesive, mutually supportive team. Elaborating, Hodkinson & Hodkinson state that 'whether a community of practice is stable and internally coherent or not… and the developing dispositions towards working and learning of the participating members… is crucial to understanding the learning that takes place' (2003, p17). Aligning with an emphasis on community are both Opfer & Pedder (2011) and Little (1990). Collaborative practice, they describe, can be a 'double edged sword' (Opfer & Pedder, 2011, p385) where an increased amount of collaborative practice can stifle creativity and promote conformity amongst the members of the group. This could be through members wanting to "fit in" with the rest of the group or not mentioning a novel idea for fear of criticism. Opfer & Pedder elaborate that the balance of collaboration is fine; too much and learning is prevented, too little and 'teacher isolation inhibits growth' (2011, p386).

Lesson observations

Lesson observations overlap with collaborative practice as some informal observations can be initiated by colleagues watching and critiquing each other's teaching. In the literature, references to observations are linked to informal learning opportunities (Lohman, 2006; Wilson & Demetriou, 2007). Teachers rated observing others as a key

activity that affected their learning but acknowledged that lack of time to arrange, watch and then discuss the observations led to a poorer quality impact on learning. This type of learning activity is classified under ‘deliberative learning’ (Eraut, 2004, p.250) as discussed earlier.

Shortland (2004) explores observations in a higher education setting and argues that observations can be powerful tools for teacher learning if mutual trust and respect can be developed between the observer and the observee. Shortland highlights several considerations to using observations as learning activities:

1. Who is doing the observing? Is it peer-peer or part of a top down appraisal?
2. What criteria is the observation being judged on?
3. How is the feedback being given?

Shortland (2010) describes that those who are completing the observations have their own views and experiences on what is effective in what they observe. Feedback is then framed on the observer’s ontological and epistemological viewpoint. In other words ‘the influence of the observer’s construction of ‘reality’ can limit the ability to give helpful feedback; prior experience, timing and other filters can result in misinterpretations and lack of agreement between observers and observed’ (ibid., p296).

A review of literature by Coe et. al (2014) in the Sutton trust’s report on “What makes great teaching” considers observations as a basis of professional development. Drawing on a collection of research, Coe et al conclude, like Shortland, that peer observations are useful if undertaken collegially and the teacher ‘has full control over what happens to the information about their observation’ (2014, p31). Citing Kohut et al. (2007), McMahon

et al. (2007) and Chamberlain et al. (2011), Coe et al. (2014) describe how observations yield formative views on a teacher's practice, with colleagues who provide supportive and constructive feedback. Observations 'force teachers to reflect on their own teaching skills and methods' (Coe et al., 2014, p31).

Returning to Shortland, the impact on learning from the observation is therefore determined by the person who observes; if a colleague is to observe without set criteria or guidance then the quality of the feedback is reduced. Additionally, Shortland argues that some colleagues who wish to be supportive may hold back in their comments in order not to be overly critical. This leads to the under-utilisation of the more "expert" teacher's knowledge. The selection of the observer is therefore important and the appropriate training on climates of respect and how to be a 'critical friend' is also necessary (Shortland, 2010, p297).

Aside from observations from peers, formal observations as part of appraisals and performance management are undertaken by school senior staff. In contrast to peer observations, appraisal observations are not as effective in promoting learning particularly if the observer is thought by the observee to lack the experience or subject knowledge to offer an effective critique (Coe et al. 2014). Where the observer was lacking experience or knowledge of context the observation was not seen as a learning opportunity. This feeling is illustrated by O'Pry and Schumacher (2012): 'Teachers who feel as though they had a principal or appraiser who was knowledgeable about the system; who valued the system; who took time to make them feel supported and prepared for the experience; who was someone with whom they shared a trusting, collegial relationship; who gave them an opportunity to receive valuable and timely feedback; and who guided them through thoughtful reflection on the appraisal results

perceived the evaluation experience as a positive, meaningful one. When any of these factors was absent or lacking in the experience of the teacher, the perception of the teacher regarding the process was quite negative as a whole' (2012, p339).

Learning from observations (whether formal or informal) depends on the quality of the observer, the value the teacher places on the observer as a person and then the quality of feedback. Feedback needs to be constructively critical so that the observee can learn from the comments. The feedback should be 'factual, non-threatening aimed at creating reflective and self-directed teacher learners' (Coe et al, 2014, p 28).

Everyday classroom practice

Everyday classroom practice allows opportunities for teachers to learn through teaching (Kwakman, 2003; Hoesktra et al. 2006). Learning could occur by experimenting with new techniques as a form of action research (Kwakman, 2003). Similarly, in day-to-day practice, learning may also occur if a teacher gives themselves time to reflect about their experiences.

Classroom practice may also cause learning implicitly. Attending CPD courses or meeting informally with colleagues is classified as deliberative learning (Eraut, 2004). In contrast, using Eraut's categories to classify classroom practice, we would see a classification of either reactive or implicit learning. Reacting to situations in the classroom can be completed either instantaneously or reflectively with hindsight. Both learning activities would develop knowledge-in practice and knowledge-of practice as expressed by Cochran-Smyth and Lytle (1999). Opfer & Pedder highlight the complexity of a teacher learning whilst practising: 'as teachers learn, new knowledge emerges from the teacher learning systems, and this new knowledge then recursively influences future learning and also what is known about teaching' (2011, p388). Adding

to the complexity, some learning may not be known. A teacher may learn that pupils from poor socio-economic backgrounds exhibit poor behaviour but may not "learn" the link to the reasons why the behaviour happens. Classroom practitioners need peers to reflect with who can challenge learned assumptions and give different perspectives on situations. This process of reflection in the classroom is now considered.

Individual reflection in teacher learning

In the previous section teachers are seen as self-reflective learners or reflective practitioners. Reflection has been used as a tool in teacher education for some years. Its origin derived from research by Schön (1983, 1987) who pioneered the idea of a 'reflective practitioner'. Schön's idea concerned 'reflection-in-action' and 'reflection-on-action' (Schön, 1983, p28). Reflection-in-action can be described as a practitioner making decisions about their practice whilst being engaged in their practice. Reflection-on-action involves a teacher looking back over a particular experience and analysing their actions and the consequences of those actions. Both reflection-in-action and reflection-on-action are examples of reflective learning.

Fenwick and Tennant (2004) discuss, in the context of adult learning, the usefulness of reflective learning. They emphasise the importance of a collective (or participative) version of critical reflection, involving peers or others, rather than individual reflection as suggested by Schön (1987). Schön iterates the practice of teaching as a "craft" and describes that, like artists, teachers should be "coached" to help improve their practice. He goes on to describe how skilful practitioners learn from their "messy situations" and that "back talk" from the situations can give new meaning and understanding – a process of reflection. Zeichner & Tabachnick (1999) also support the arguments of "reflection in action" and "reflection on action" and make a point that reflective teaching is a social

activity that either looks back at what has happened for certain meaning or looks forward in order to plan for future teaching. In contrast, Moore (2007) and Convery (2001) are critical of some of the work of those advocating reflection. Moore states that learning by reflection could allow practitioners to over simplify the complex interactions of the classroom and argues that while some forms of reflection are beneficial, in some instances this could lead to over personalisation of the classroom. Reflection is not intuitive and is also a challenging skill for teachers; particularly if reflection leads to a teacher viewing their practice negatively. Convery feels that the values of the teachers need to be taken into consideration when they reflect to truly allow reflection-in-action to work. Convery also criticises Schön, suggesting that teachers may not be improving for "self" but as a notion of self-protective individualism. Convery draws on the work of Elliot (1989), Dadds (1993) and Day (1993) to conclude that collaboration is essential for improvement and practice but it is crucial to look at the type of collaboration, the people who help collaborate and the many emotions that run high during the different types of collaboration processes. In later work, Day (1999) argues that learning by reflection is only useful when a teacher works with a critical friend as learning by reflection-in-action is rarely a rational process. Elaborating further, teachers self-reflecting about their practice is wrought with tensions. Understanding and recognising that our own practice may not be good enough is uncomfortable (Cordingley, 2015). The high stakes nature of teaching; in particular the need to show "good" teaching through appraisal and performance management systems could lead to teachers being guarded about their own development in order to hide their perceived inadequacies. Additionally, appraisal systems create a high stakes climate where "good" teaching is expected for career progression. If reflection identified weaknesses, a teacher may not admit this for fear of being questioned about their competence. Reflection plays an integral part to

teacher learning but is limited to the experiences, skills and the desires of the teacher who is "doing" the reflecting.

Considering the literature as a whole, there became a clear gap; there was little research that specifically considered the learning of practising secondary school teachers. Section 2.5 now draws the key themes of this review together.

2.5 Summary – Drawing themes together

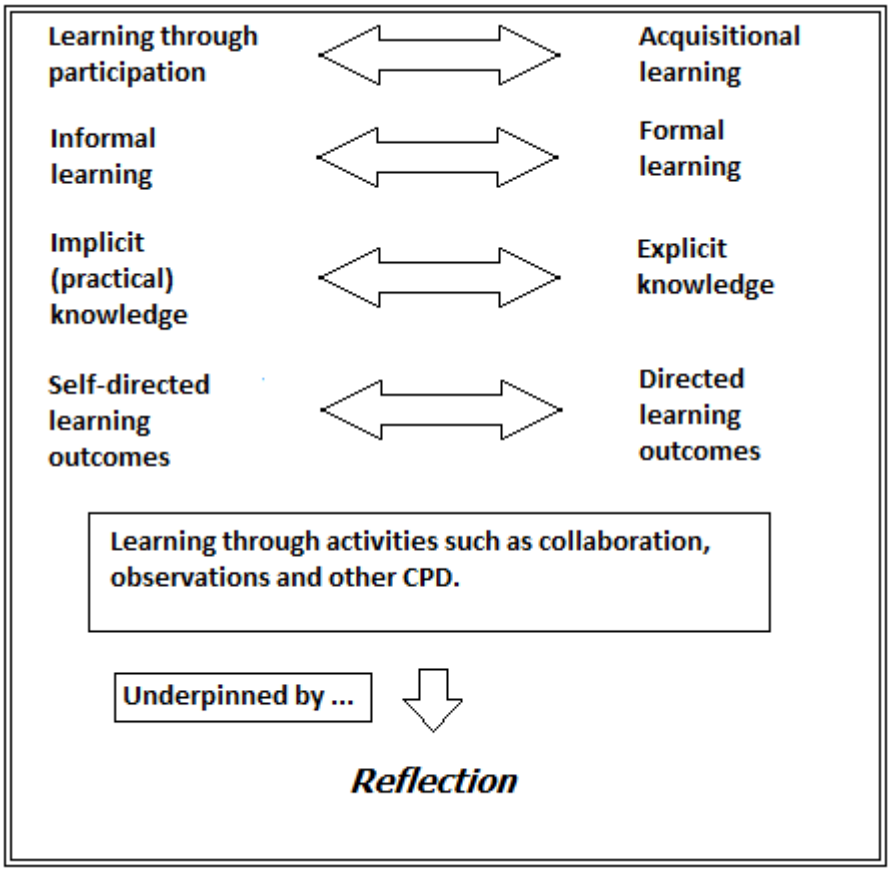
In this section the fields of learning, adult learning and workplace learning have been drawn together to conceptualise teacher learning. Viewed from different perspectives such as acquisition, re-construction and participation, the literature demonstrates that teacher learning is complex and has led to an array of different learning theories. In addition, changing UK government policy on teacher learning and development has led to schools being more responsible for the learning that happens in their institutions. Understanding teacher learning is key to planning effective professional development.

In order to understand what teachers learn, I brought together models of a teacher's knowledge base. The literature demonstrated that although the models of Shulman (1986, 1987), Borko and Putnam (1995) and Banks et al. (1999) are different in concept there are similarities between them; namely the base of pedagogical knowledge intertwined with subject knowledge, local knowledge and personal construct. The work of Cochran-Smith and Lytle (1999) conceptualised and defined the formal teachers' professional knowledge base as "knowledge-for-practice". Cochran-Smith and Lytle also considered "knowledge-in-practice" whereby learning and development happen when teachers engage in practical experiences.

Finally, different teacher learning activities were considered. The literature demonstrated that teachers learn in a variety of different ways; from formal training courses to informal learning activities initiated at the direction of the teacher.

Each of the key themes are linked together and interrelated, as shown in Figure 2.4:

Figure 2.4 Amalgamating key research themes.



Acquisitional learning, formal learning and explicit knowledge are linked by the codified nature of propositional knowledge. A CPD course can be set up with explicit content to learn along with directed learning outcomes that are delivered and assessed formally. In contrast, teachers could learn practical, tacit knowledge from experienced peers. Teachers would set up their own intended outcomes from their knowledge of their own practice and then take place in activities that vary from observations of others to varying forms of collaboration. After the activities have taken place, teachers have opportunities

to reflect on their experiences. The horizontal arrows show themes that link together; the themes are not meant to be opposing, however, they are contrasting and based on a continuum. The penultimate box under the horizontal arrows show examples of activities that are intended to promote learning. The vertical arrow pointing downwards gives credence to the evidence in the literature on how reflection (whether individual or with peers) underpins the learning process.

Nonaka and Takeuchi (1995) offer an example of how workplace learning can be considered from the perspective of a Japanese company and its associated epistemology, see Table 2.2. The model suggests that learners (in this context) can transfer between different types of knowledge by certain groups of activities. Socialisation, for example, aligns with communities of practice (Lave and Wenger, 1991) where the 'key to acquiring tacit knowledge is experience'. Internalisation is akin to reflection (Schon, 1983) and experiential learning (Dewey, 1938) where learning builds up an internal catalogue of experiences that can be applied in different contexts.

Table 2.2 Four modes of knowledge conversion (Nonaka and Takeuchi, 1995, p62)

	To Tacit (Implicit) knowledge	**To Explicit knowledge**
From Tacit knowledge	Socialization	Externalisation
From Explicit knowledge	Internalization	Combination

Nonaka and Takeuchi's model recognises that the type of learning activity that occurs is linked to the type of knowledge that is developed. Their model of knowledge conversion doesn't claim to explain teacher learning and Nonaka and Takeuchi also emphasise 'proponents of [knowledge conversion] consider knowledge transformation as mainly

unidirectional from declarative (explicit) to procedural (tacit), whereas we argue that the transformation is interactive and spiral' (1995, p62).

From a teacher learning perspective the gap in the literature exists because few researchers have brought all key themes together to view teacher learning holistically. In particular, even fewer researchers have focused on teacher learning from the perspective of practising secondary school teachers. This research intends to bridge this gap and answer the research questions.

CHAPTER 3 METHODOLOGY

Justifying the chosen methodology for this study, this chapter starts with a discussion of the ontological and epistemological beliefs underpinning this research with a justification of an interpretive case study approach. The penultimate part of this chapter considers the methods employed to undertake this research, trustworthiness and the ethical dilemmas encountered. Finally, there is a summary of the initial study and how it influenced the main research, followed by a discussion surrounding the approach to analysis.

3.1 Research paradigms

Researching teachers' perspectives offers a unique insight into their learning. Each teacher, while teaching, would have engaged with different activities intended to promote their own learning. Probing and exploring perspective requires a methodology that reflects the subjectivity of learning episodes. Methodological considerations have to take into account both the personal perspectives and world views of the researcher (and the system) as well as that derived from the nature of the research.

Historically, research methodology explored the objective. This methodology, the scientific method, is classified under the term positivism. Work by Popper (1968) emphasised that effective empirical enquiry had specific characteristics. These characteristics outlined a basic framework for research, namely:

1. The generation of a testable hypothesis based on a theoretical framework.
2. The collection of empirical data through observation; verified and repeated by others.

3. The corroboration of old theory (or generation of new) by correlating the data with the initial hypothesis.

Positivistic approaches have common assumptions. Cohen et al. (2003) outline each one:

Determinism: - Events have causes. Each event is explicable and scientific methods seek to formulate laws to understand events.

Empiricism: - The strength of a hypothesis or preposition depends on the strength of the empirical evidence that supports it.

Parsimony: 'Phenomena should be explained in the most economical way possible' (Cohen et al., 2003, p.10).

Generality: This assumption links the concrete with the abstract. Findings are generalised to the world at large and are concerned with explanation of phenomena.

Positivism, as a broad category of research, did not fit with this research. Generality, when applied to teacher learning, would not match the wide individual interpretations of different learning events. I was also interested in understanding secondary school teachers' perspectives and so my research approach was influenced by my own professional knowledge and experience; as a teacher, leader and student researcher.

My personal journey to this stage of my research had been fraught with tensions as I grappled with unfamiliar concepts and philosophical viewpoints. My background in chemistry meant I was familiar with positivist approaches to research. In contrast to teacher learning, my view of chemical knowledge was 'fixed' and 'certain' and variables could be tested by disassociating them from the context in which they were situated. My

interest in both teacher learning and development meant positivism and associated methodologies would not be suitable. I needed to consider post positivist approaches.

Cohen et al. explain that post-positivism has several key assumptions (2003, p22):

1. People actively construct their own social world.
2. Situations are fluid and changing rather than fixed and static.
3. Events and individuals are unique and non-generalisable.
4. There are multiple interpretations of, and perspectives on, single events and situations.
5. Reality is multi-layered and complex.

The key features of post-positivism changed my cognition from my original scientific background. I realised that as a researcher, my research questions shaped both my ontological and epistemological beliefs and subsequently guided my choices of both my approach and methods of research. I firmly believed that teachers, as professionals, are a source of data when attempting to understand teacher learning. Simply, I sought to understand how teachers conceptualise their own learning and development and was interested in how teachers described their own learning. I realised that the school itself was one of many variables that added to the complexity of the research. In addition, the complexity of a teacher's learning was made even more difficult by the connection with the context of each teacher's practice. This ontological viewpoint aligned with Guba & Lincoln (1994, p.110) whereby teachers' realities are 'multiple, social and experientially based and local and specific in nature'. In other words, to understand teacher learning, my research must be both transactional and subjectivist (Guba & Lincoln, 1994). To answer my research questions I needed to grasp the teacher participants' worldview. I

was not separated from the participants and my findings were 'literally created' as my research proceeded (Guba & Lincoln, 1994, p.111). My stance as a researcher, therefore, aligned with interpretivism, as I believed that 'knowledge is subjective, rather than objective' and that I would 'learn from the participants to understand the meaning of their lives' (Marshall & Rossman, 1999, p.4). I was also interested in how the teachers' learning emanated from their everyday practice and therefore was 'intrigued with the complexity of social interactions and the meanings that participants attribute to these interactions' (Marshall & Rossman, 1999, p.4).

Schwandt (1994), Burgess et al. (2006), Silverman (2000) and Bogden & Biklen (1992) discuss 'interpretivism'. Similarly to Cohen et al., they consider how research participants have a variety of viewpoints which they have constructed via their own experiences. Interpreting and analysing the varied viewpoints were key to understanding phenomena that were entangled with the participants' context. The researcher's role in the 'interpretation' was pivotal to the research. A researcher's context, world-view and experiences would affect the conclusions drawn from interpreting the data.

The use of interpretivism was further supported by Cohen et al (2003, p26) who stated that interpretivism fitted 'naturally to the kind of concentrated action found in classrooms and schools' as it can 'preserve the integrity of the situation where they are employed'(Cohen et al., 2003, p.26). I now needed to consider the approaches that were considered interpretive.

The interpretive paradigm encompassed a wide range of styles, models and typologies of qualitative research (Cohen et al., 2003). Denzin & Lincoln (1994), Atkinson, Delamont

and Hammersley (1988) and Creswell (1998) all summarise different strategies for interpretive research. The commonality between the definitions were:

1. An emphasis on "naturalistic inquiry" (Denzin & Lincoln, 1994, p.111).

2. The researcher cannot be disentangled from the research.

3. The research is 'pluralist and relativist' with multiple, sometimes conflicting, interpretations of the data (Guba & Lincoln, 1994, p.128).

Interpretivist methodologies focus mainly on the collection of qualitative data. Qualitative data contrasts with quantitative data and research approaches. Silverman (2001) describes quantitative research as an approach that objectively records reality using pre-determined categories to count different variables, or as Murray Thomas states, 'numerical measurements of specific aspects of phenomena' (2003, p.2). A solely positivist, quantitative approach was not appropriate for this research as it would not permit the 'thick descriptions' of perspective to be generated (Geertz, 1973, p.6) which is what this research is primarily seeking to investigate.

Hammersley (1992, p.105), in supporting post positivist, qualitative research argues that it is important to 'document the world from the view of the people studied' and this needs a methodological approach that facilitates viewpoints to be documented and recorded. Similarly, Creswell argues that focusing on exploring meaning requires an approach that 'honours an inductive style' (2008, p.4). Creswell explains that qualitative, interpretive research requires data to be 'typically collected from the participant's setting' with 'researchers making interpretations of the meaning of the data (collected)'.

Bogden & Biklen (1992) and Heath & Hindmarsh (2002) argue that a qualitative approach, whereby teachers' behaviours and experiences can be understood, is more successful when observed in the settings in which the experiences occur. This justified the collection of data "in situ" in the secondary school in which the participants work. In addition, the lack of prior hypothesis means that data collection is more fluid and sensitive to the local environment (Mason, 1992) and interesting, unpredicted, themes could arise from the data that may not be originally planned for. To exemplify this further, Cohen et al. (2003) outline that a quantitative approach is more suited to hypothesis testing, in contrast to a qualitative approach that starts the research with no hypothesis but intends to generate possible hypotheses by interpretation of the data.

In summary this research emphasises exploring secondary school teachers' perceptions, viewpoints and opinions. The aim was to see the world of teacher learning and professional development through the eyes of the participant teachers and search for meaning in what they say. The use of a qualitative approach led to an exploration of the context of each teacher's professional learning; it enabled teachers to describe their opinions of events that could cause learning to happen. An interpretive, qualitative approach was an appropriate "fit" to explore my research questions as it allows a deeper exploration of perspective of teachers' professional learning than a positivist, quantitative approach could offer.

There are many, varying, types of interpretive research. Cohen et al. (2003) grouped the research into phenomenology, ethnomethodology and symbolic interactionism. Creswell succinctly summarises the different approaches into five 'traditions' (1998, p.65):

1. Biography

2. Phenomenology
3. Grounded Theory
4. Ethnography
5. Case Study

Each ‘tradition’ has particular strengths and weaknesses with regards to ‘what’ is being researched. Each approach is not discrete and there is overlap between each tradition. Section 3.2 considers why some approaches were rejected and why a case study approach was chosen.

3.2 Alternatives to the case study approach

This section will briefly discuss why other research approaches were rejected before section 3.3 justifies the choice of a case study approach.

Creswell’s description of biography emphasises the study on an individual, their experiences as told to the researcher or found in documentary evidence (Creswell, 1998, p.47). This involves collecting a chronology of the participant’s life and perhaps stories narrated by the individual. These stories are useful to explain the context behind certain events in an individual’s life. Understanding a participant’s biography will be useful in contextualising how their learning takes place. Recalling activities that promote learning (research question three) will require participants to describe specific events and what those events meant to them. Participants’ experiences tend to be ‘wrapped up’ within anecdotes and life stories. A participant’s narrative and interpretation of events is a form of implicit conservatism (Cohen et al., 2003) and is considered alongside validity in section 3.6.

A wholly biographical approach is not appropriate as it is difficult to have a clear historical understanding of the participant without great length in the field. A participant's life is not just bound by the experiences of the 'case'. Experiences in a person's life can shape their viewpoints but some experiences may be irrelevant to the context I am investigating. There may also be a question over validity and I may not have access to historical documents to validate some perspectives.

In contrast to researching an individual there are other approaches that focus on investigating whole cultures or groups of people (Cohen et al., 2003). An ethnographical approach summarises a holistic cultural portrait of a group from both the actors in the group (emic) and the researchers own interpretation (etic) (Creswell, 1998, p.61). As a researcher and an 'actor' within my own setting this would make 'going native' challenging as it could be interpreted that I am already 'native' (Creswell, 1998, p.62). I am not arguing that I understand others views, as this contravenes my relativist stance. I am arguing that, despite culture being an interesting variable, I am not attempting to solely describe the learning culture of the teachers. I am interested in the teachers' perspective of learning. The culture and learning that I describe is bound by the case study school and is interwoven with each participant's biography, experiences, and attitude.

The final two traditions are grounded theory and phenomenology. These traditions intersect with my research. Phenomenology focuses on selecting particular individuals who have experienced phenomena. It is the study of direct experience taken at face value rather than by external, objective and physically described reality (English and English, 1958). Creswell advocates the sole use of interviews to explore phenomena (Creswell, 1998, p.64). My research aligns with the philosophical viewpoint of phenomenology where there is a focus on investigating a participant's experience (Patton, 2002). My

research diverges at Merriam's viewpoint of 'phenomenological research is well suited for studying affective, emotional, and often intense human experiences' (Merriam, 2009, p.26). I would argue that until researched I cannot assume that learning is affective, emotional or intense. In addition, as stated in section 2.2, learning is complex and bound by many contextual variables; a case study approach associates with my research questions.

In grounded theory, Glaser & Straus (1967) developed an approach whereby data is collected extensively in the field. Data are then used to detail a theory or theoretical model. My research differs from grounded theory whereby I am not attempting to generate a theoretical model. In my research I am looking for common themes and perspectives that can improve teacher learning in my own institution. Additionally, researching one school contrasts to the saturation of data that is required for grounded theory. This would have problems for external validity and generalisability. The concerns of validity and generalisability are discussed in section 3.6.

3.3 Describing and justifying a case study approach

The case study approach is now considered a legitimate approach to interpretive qualitative research (Robson, 2002, p.180). Aside from Creswell (1998), Yin (2003) is a proponent of case study as a methodological approach. Yin describes how the case study has developed from a technique that was denigrated for insufficient precision, objectivity and rigour to a method used extensively in social science research (Yin, 2003, xiii).

Yin (2003) uses a two-fold definition focusing on both a case study's scope and features. He states that a case study is an 'empirical enquiry that investigates a contemporary

phenomenon (the case) in depth and within a real world context especially when the boundaries between phenomenon and context may not be clearly evident' (Yin, 2003, p13)

In addition, Yin describes the features of case study research as:

1. '[coping] with the technically distinctive situation where there will be more variables of interest than data sources' which leads to…

2. '…a reliance on multiple sources of evidence with data needing to converge in a triangulating fashion which…'

3. '…benefits from the prior development of theoretical propositions to guide data collection and analysis.' (Yin, 2003, p.14)

Yin's definitions and views give credence to the choice of a case study approach to this research. Firstly, the notion of research being "bound" to a particular system (or "case") is an integral feature of the definition of a case study and features in associated literature (Merriam, 1988; Stake, 1994; Creswell, 1998; Yin, 2003). This research will be bound to the case of one secondary school and focus on the qualified teaching staff therein. This will lead to the research developing an in-depth analysis of the single case (Creswell, 1998, p.65).

Secondly, Merriam describes the use of a case study as a heuristic whereby it can 'illuminate reader to understand the phenomena under study' (1988, p.30). Stake (1994) elaborates this argument further when evaluating the knowledge emanating from this

type of research compared to other approaches. He states that case study research is both more concrete (as it resonates with experience from the case) and more contextual (as data that is rooted in context) (Stake, 1994).

If a case study approach leads to more concrete and more contextual data then the answers to my research questions may lead to improved teacher learning and practice in the case study school. As Stake notes 'the purpose of the case study is not to represent the world but to represent the case' (1994, p.245). My professional knowledge and practice will expand as I learn more about the teachers in my own institution.

Thirdly, Yin acknowledges that case study research can excel in accommodating a relativist perspective; acknowledging multiple realities have multiple meanings (Yin, 2003, p.16). This aligns with my own ontological and epistemological views as a researcher.

To summarise, case study research is a strategy that is bound to a case, can focus on researching phenomena that is not readily distinguishable from its context and allows for a relativist perspective (Yin, 2003, p.13). There are different types of case study that can be chosen and the choice is influenced by the research design.

Stake (1994) and Merriam (1988) categorise case studies. Stake offers three types of study: intrinsic, instrumental and collective. Stake's definitions overlap and this case study is both intrinsic (as I wanted an understanding of this particular case) and instrumental (the case offers insight into a particular issue). Similarly, Merriam also classifies case studies into three types: descriptive, interpretive and evaluative. A descriptive case study is designed to simply describe the phenomena under study. The

descriptions can then be used to generate new theory to apply to subsequent cases. An interpretive case study may also contain description. The description is used to challenge, support or illustrate theoretical assumptions. Merriam states that in these incidences researchers may use the descriptions to construct new theory or suggest links between variables. The final category is the evaluative case study. In this definition, the case is described, interpreted or analysed and a judgement made about the purported success of the phenomena under investigation.

Merriam's categories appear to have overlap and my research does not fit into one category. My research is not singularly descriptive as my primary focus is not about providing a description of a case. Furthermore, I am not seeking to be evaluative about the success of a programme of teacher learning – I am looking to explore participants' perspectives on teacher learning. I intend to interpret the data to understand the nuances of teacher learning that will subsequently inform and change the case study school's professional development programme. Considering these points, and Merriam's definitions, I believe that this research aligns with an interpretive case study approach. Section 3.4 explains the choice of site of this case study.

3.4 Choosing the site and participants

The 'site' of the 'case' (Yin, 2003) that has been chosen for both the initial study and the main research project is a mainstream secondary school in eastern England. In this research, the case study school will be referred to under the pseudonym of 'King Henry School' (KHS). Pupils' abilities on entry to the school are below average, which mirrors the socioeconomic background of the school where 10% of families come from disadvantaged backgrounds. Over 90% of the students are White British with the

remainder a mix of different ethnicities. KHS has approximately 1000 pupils and over 100 members of staff, 70 of which are teachers. Anonymous demographic data shows that the gender profile of the teaching staff is approximately 48% male and 52% female. The academic profile of the school indicates its results are above average when compared to national data and also considering pupils' academic starting points. The school works in partnership with the local authority and higher education establishments to train teachers. The school was recently made a lead school in a training partnership with another, outstanding, local school.

I have worked at KHS for nine years in a variety of roles. Working in the school enabled me to have a clear understanding of the school's context, how the school ran and how to negotiate access to collect my data. Access to the school and participants was formally negotiated with the head teacher as gatekeeper. This was important in order to create a distinction between my two roles, one as a researcher and one as a work colleague. The impact of my roles on the trustworthiness of this research is discussed further in section 3.6.

I reviewed the demographics of the teaching staff in order to select a representative sample and participants were selected using stratified, purposive sampling (Silverman, 2000). Creswell (1998) proposes that purposeful sampling strategies in case studies should seek to look for participants with maximum variation in views within the case. It is for that reason I considered the proportions of male/female participants and the number of years of teaching experience. Using data from KHS I viewed the experience of all the teachers in terms of years' teaching. I proposed the following three strata:

- Teachers with 1 – 6 years' experience.

- Teachers with 7 – 14 years' experience.
- Teachers with 15+ years' experience.

The strata were based on experience, as experience can alter the perspective a teacher has about their own learning (Vermunt & Endedijk, 2011), therefore gaining a range of differing viewpoints about teacher learning.

The second focus for selection was based on my findings from the initial study (elaborated in section 3.7) and was based around engagement with learning in the school. Participants of the focus group gave the impression that they were all active and engaged in their own learning and development and referred to the "grumpy old man in the staffroom" which the NQTs implied was a person who had a negative or perhaps critical stance to the learning that takes place in the school. The reverse of this "stereotype" I will define as "engaged" where a teacher appears to be engaged in improving their learning. Part of my sampling strategy was to find participants who may consider themselves (or be consider to be by others) "critical". This categorization was not intended to generalise that "critical" teachers are disengaged from their learning, merely to emphasise that there are different perspectives and attitudes to learning. As an insider to KHS, I considered what I knew of participants' previous experience and how they evaluated professional development and this informed my consideration of their perspective. Participants were approached to see if they would like to take part in the research and table 3.1 outlines those that agreed:

Table 3.1 Interview participants (names are pseudonyms)

Participant	**Gender**	**Years of service (strata)**	**Attitude:**
Frank	M	6 Years (less experienced)	Critical
Carol	F	6 Years (less experienced)	Engaged
Edward	M	10 years (middling experience)	Engaged
Diane	F	7 years (middling experience)	Critical
Barry	M	20 years (most experienced)	Critical
Alice	F	18 years (most experienced)	Engaged

3.5 The study: A discussion of methods

This section explains and justifies the data collection methods chosen for my study. The full research schedule can be found in Appendix A.

3.5.1 Introduction to methods

In section 3.1 I described that appropriate data collection methods needed to be considered. I needed to choose interpretive, qualitative methods that enabled rich or "thick" description of the participants' view of their own learning (Geertz, 1973). After careful consideration of the variety of methods defined as qualitative research, the following methods were chosen:

For the six participants:

1. A short written task to elicit an understanding of each participant's context and to make the participant think about their own learning; a pre-interview task (Appendix B).

2. An interview with each participant to delve deeper into their perceptions of their own learning in and out of the classroom.

3. An optional evaluation sheet for each participant to complete after a "formal" learning event that the school plans and enacts.

Table 3.2 – Research schedule: written for teacher participants

When?	**What will be involved?**	**What data is collected?**
October 2013 – December 2013	A short written activity about you as a teacher and your experiences.	Your written work will be collected and analysed. This will be used to collect data on you in the interview.
October – December 2013	An interview lasting between 40 and 60 minutes.	An audio recording of the interview followed by a written transcript.
Ad hoc throughout the year	A short (A4 page) evaluation "honesty" sheet for you to reflect on any learning activity.	Your reflections on each event will be collected and analysed.

For the wider case study (The whole teaching staff):

After the data has been collected from the sample, a semi-structured questionnaire (see Appendix C) was used to question the wider teaching population (n=70) from the case study school, that would be used to triangulate and validate the evidence.

In addition, relevant documents were collected that could add further depth or context later; examples were the school calendar with training outlined and the school development plan.

The next section justifies each method in context of the data I needed to collect to answer my research questions.

3.5.2 Pre-interview sheets and interviews

The time for the study allowed in depth interviews to take place that explored teachers' perceptions and reflections of their own learning. Interviews, like focus groups, used conversation as access to a person's knowledge and are "hermeneutics" – they give an interpretation of a person's meaning (Kvale, 1996). Interviews offered a 'window' into how teachers view their own learning and development. Schutz (1967) offers a caveat in that interviews may only portray part of "the story" as our understanding of a person's perspective would only be completely accurate if we were that person – otherwise all we are doing is seeing our own version of their perspective. My interpretation of a participant's perspective is part of the reflexivity of my role as a researcher (discussed in section 3.6.3).

Interviews and questionnaires were chosen to elicit teachers' views on learning because, although they were open-ended techniques, they had something different to offer. They were also able to be based around the research questions; exploring perceptions of learning and finding out about learning activities. Interviews allowed detailed and emotive stories to be told that wrapped up teacher learning definitions in a narrative. The interviews offered depth of understanding where the questionnaires offered breadth. Semi-structuring key questions in the questionnaire still elicited detailed responses but applied to a much wider sample. The data from the interviews could then be compared to that of the questionnaires to sample the perspectives of teacher learning within the case study.

To prevent the interview from being too onerous on the individuals involved, I designed, with some input from other doctoral colleagues, a "pre interview task". The pre-interview task (Appendix B) provided a starting point for the interview and enabled data to be collected on the participant's background before the interview commenced. Interviews are more fruitful when regarded by the participant as a social, interpersonal encounter rather than a data collection exercise (Cohen et al, 2003). The pre-interview task, therefore, enabled me to both "ease" the participant into the interview and engage with the participant with common ground.

The participants shared the pre-interview task with me before the interview. The task then formed the earlier part of the interview schedule. The interview schedule (Appendix D) demonstrates how the interview questions developed as the interview progresses and shows the link to each research question.

The schedule shows how the questions form the semi structure of the interview (Cohen et al, 2003) as well as the links to my research questions. The most challenging questions, those regarding the perceptions of the terms 'learning and development', are in the latter part of the interview. At this stage in the interview I hoped that the participants were talking at ease so were able to discuss the more challenging concepts.

The semi-structured nature of the interview enabled the data to be comparable across participants but there was a risk of losing an opportunity to see how the participants themselves structure their own ideas (Bogden & Biklen, 1992). The interview was not fully structured as this form of rigidity would disallow rich and specific answers (Cohen et al. 2003). Additionally, the interview questions were deliberately 'open' to elicit as much information from the participant as possible. Some responses needed intervention,

e.g. “could you explain X further?”, “what do you mean by Y?”. As the researcher, I directed the conversation to cover the points I wanted discussing but balanced it with a need to collect good quality data. I needed to keep the participant focused and avoid ‘…undisciplined and haphazard poking around…’ (Lincoln & Guba, 1985, p.251).

To aid accurate data collection, the interviews were audio recorded with participants’ permission. This was less obtrusive when compared to video recording (Cohen et al. 2003) but did not capture the participant’s non-verbal actions (Seidman, 1991). I made notes, where appropriate, to counter this concern.

The interviews took place over a three month period during the winter term of 2013. Each interview was conducted in a location chosen by the participant, after school hours and lasted 60-70 minutes. The choice of venue was to empower the participant in viewing that they were in control of the interview process. Five participants chose their own classroom; one their office. Each participant completed the pre-interview task and each interview was conducted adhering loosely to an interview schedule (see Appendix D). Each pre-interview task was read prior to the interview and formed the basis of the first questions e.g. “I noticed you studied at X… tell me about that experience.”

The audio recordings allowed for playback and checking. Each interview was transcribed fully by myself for analysis, with inflections, accents and emphasis removed. The transcription of data is a crucial step for analysis but has potential for data loss and distortion (Cohen et al., 2003). Full transcription was time-consuming but necessary and helped to avoid the transcript becoming an ‘opaque screen’ between the researcher and the original interview (Kvale, 1996, p.167). In terms of internal validity transcriptions were passed to participants to read and validate as a true and accurate record. One

participant out of the six chose to remove a section that they considered personal and could cause distress to a member of their family. The other five participants agreed the accuracy of the transcripts and did not feel necessary to add or elaborate any answers.

To preserve participants' anonymity two steps were taken:

1. Any specific places that could identify the participant were anonymised e.g. University X, School Y;

2. Use of pseudonyms.

The participants had the opportunity to choose their own pseudonym. None did so and were happy for me to assign pseudonyms. Further ethical considerations are considered in section 3.6.

3.5.3 Reflection and evaluation sheets

The second method of data collection was the use of reflection and evaluation sheets (Appendix E). These were an opportunity for the six research participants to reflect on any training that KHS initiated during the year of data collection. Participants could choose to fill in a sheet whenever they took part in learning activities. The purpose of the sheets were:

1. To provide a source of data to validate the information the participants provide from their interviews. Kvale (1996) describes this as dialectical where interview statements are compared to what is actually happening in their practice.

2. To provide an opportunity for the participants to reflect on their learning and development as an additional source of data in partnership with that of the interview.

Coding that had been generated throughout the interviews was applied to the evaluation sheets to cross link the data between all data collection methods.

3.5.4 Questionnaires

The third research method was the semi-structured questionnaire which was administered to the wider KHS staff. The questionnaire was used as a tool to triangulate data from the interviews. It was also used to explore the concept of teacher learning and development across a wider sample as time would not allow for individual interviews. Lincoln and Guba (1985) suggest that credibility in this type of inquiry can be addressed by prolonged engagement in the field, persistent observation and triangulation of methods. I would argue that the use of a questionnaire in this project would meet these three suggestions as it promoted further engagement at KHS, allowed for exploration and observation of data from a wide range of teachers and also triangulated the data from the interviews. In addition, the questionnaire did not look to generalise findings to a wider audience as the sample was still very small. The questionnaire, therefore, explored what data was typical for this 'case' and evidenced common themes across the data generated by all teaching staff.

The questionnaire was used as a tool to ask similar questions to the interview to a wider sample within the case. This allowed answers in both the interview and the questionnaire to be 'compared for consistency…. and provide some indication of the prevalence of the phenomenon' (Yin, 2003, p.86). The phenomena in this case was teacher learning. Each

question was grouped under the corresponding research question in order to continually share and remind the participant what I was investigating (see Appendix C). The first section of the questionnaire consisted of an opportunity for participants to list what they learnt when they trained to teach. Linking to research question two, the teacher participants were then asked to circle what they are still developing and offer an explanation as to why they felt that way. The second section focused on the activities that a teacher felt affected their practice – linked directly to research question three. The section started with a closed question with seven familiar activities that KHS regularly used to promote CPD. Creating a sense of familiarity, the data from this question would offer a simple insight into how KHS' activities affects its teachers. Directly after this question was a section that was open-ended. Teachers could elaborate other activities that they learn from that are not directly linked to the activities set up by KHS. Finishing this section and linking to research question three were two opportunities for participants to describe both an activity that they found had positively impacted their learning and then an activity that was not as useful. The purpose of this question was to elicit key traits of successful learning opportunities.

The final section of questions was linked to research question one; perception of learning. The questions allowed for elaborated responses to collect as rich data as possible.

A graphical approach was also used to collect data about teacher learning. Whilst considering the literature I came across Cameron et al., (2013) who had questioned participants on their learning using a graph. The graph's purpose was to elicit information about perceptions of learning over time where participants could show how they felt towards their learning at key points in their life. Colleagues trialling the

questionnaire commented that it was an interesting approach – however there were different conceptions of what the graph meant. I added an example graph for participants to look at, to model what I was expecting. The final graph can be viewed in the example questionnaire in Appendix C.

The questionnaire was coded for anonymity and also included a small amount of data that could be quantified (e.g. gender, years teaching etc.). Data could be thematically grouped, loosely quantified and then linked to a teacher's gender and experience. This could yield further patterns and themes that may be unexpected and serendipitous.

The questionnaire was circulated for scrutiny: to my supervisors, followed by doctoral students and finally teacher colleagues in different schools. At each stage of scrutiny, additional adjustments were made to the questions and structure. The questionnaire was re-drafted four times and the final version was checked for clarity before it was used. Clarity checks were undertaken by colleagues in other schools who read the questionnaire and commented on the ease of understanding the questions and suggested data that could be collected.

The questionnaire was distributed in a staff meeting (n=70) and 55 questionnaires were returned, a completion rate of approximately 79%. To avoid potential researcher bias interfering with, or influencing the data, a colleague introduced the questionnaire to staff. She indicated the questionnaire's purpose and what was required to complete it fully. Directed time was given in a staff meeting for completion and staff were encouraged and reminded via e-mail to hand the questionnaire in at a later date. A decision was made not to verbally or personally chase missing questionnaires as this

coercion would influence the data collected and also be unethical. Table 3.3 illustrates the demographics of those who completed the questionnaire:

Table 3.3: Demographics of questionnaire sample.

	Teaching for 0 – 6 years	*Teaching for 7 -14 years*	*Teaching for 15+ years (Max 26)*	**Total**
Male	8	11	7	26
Female	13	13	3	29
Total	21	24	10	55

3.5.5 Document collection

The final source of data came from documents. Yin (2003) emphasised the necessity to collect data from multiple sources to improve the validity of analysis during case study research. As a practising teacher within the case study, I had access to a variety of non-confidential documentation. Throughout the data collection period any document that was related to teachers' professional learning and development was collated. This included:

1. Training schedules for the year.
2. Copies of general evaluation forms from training (where sourced).
3. Copies of school development plans that referred to training.
4. Non-confidential minutes from senior leadership team meetings.

In addition to this data I kept a "field log" of non-planned data collection and reflections. I made a decision to collect documents that were freely available for all staff to read rather than, for example, specific course evaluation sheets. Respondents in this instance

would not have known their specific comments would be used for research and so it was not ethical to collect this data.

3.5.6 Summary of methods employed for the study

A summary of all the data collection methods employed is given in table 3.4

Table 3.4 Summary of all data collection methods employed.

Sequence	Method	Participant information	Further comments
1.	Focus group	Six participants. Homogeneity – all participants are NQTs.	Sole part of the initial study. Exploratory to trial key questions.
2.	Pre-interview task	Given to six interview participants prior to the interview. Six participants are different from those chosen for the initial study.	To gain a starting point prior to the interview and to additionally act as a discussion tool.
3.	Semi structured interviews	Six participants (see above) chosen through purposive sampling in order to gather a range of different perspectives.	
4.	Reflection and Evaluation forms	Given to interview participants after each CPD course they attend.	For internal validity, and to uncover additional information.
5.	Document collection	None	Documents (e.g. training schedules) collected during the duration of the study.
6.	Semi structured questionnaires	Given to 70 participants. Fifty five responded giving a response rate of 79%.	Designed to compare data from interview and also elicit a further, wider, range of perspectives.

The next section outlines how I maintained research quality in terms of trustworthiness and ethical considerations.

3.6 Validity, reliability and ethical considerations

Careful consideration of ethical dilemmas was needed when working and researching in the same workplace. Additionally, the notions of validity, reliability and the role of the researcher needed to be addressed to alleviate any concerns about bias within this research.

This section describes how ethical approval was obtained. This is followed by a discussion around trustworthiness, power relationships and insider/outsider perspectives of researching in the workplace.

3.6.1 Ethical considerations

The ethical procedures followed were in line with the British Ethical Research Association (BERA) and the Open University Ethics Committee. The initial study and main research project had both been given ethical approval by The Open University. Copies of the approval, consent letters and plain English statements are included in Appendix F, G and H.

Adhering to the BERA guidelines, it was unlikely that the physical participation in this research would cause any harm to participants. Any harm could arise from either the time they dedicate taking part in the research (which is low risk) or to making confrontational or controversial statements that could be attributed to them. This was addressed by the process of anonymity.

Making the data anonymous removed the risk of data being linked back to staff members. Participants read their individual transcripts so they were reassured this was the case. Additionally:

1. Questionnaires were coded so respondents were unknown;
2. Names of people, institutions, dates and genders were changed or deleted (Cohen et al. 2003);
3. Roles where people can be identified (e.g. Head of History) were made more generic (e.g. Middle Leader);
4. Data were secured by storing in a lockable cabinet so that it could not be accessed. It will be destroyed five years after the research ends.

One possible benefit of the research was that, through exploring and discussing their learning, the teacher's practice may improve. As this was only potential, and would be difficult to quantify, it was not promoted to the participants.

A final ethical consideration was the use of data obtained "outside" of the interview, observation or questionnaire. If the data collected had not been outlined in the consent form, then it was not used. This could mean a loss of valuable data but if consent had not been given it would have been unethical to utilise it.

The next section summarises validity and reliability regarding how the integrity of this thesis was maintained through a consideration of the "trustworthiness" of the research. As this study was completed in a setting in which I work there was an even greater emphasis on how this research would be both valid and reliable. Cohen et al. (2003) argue that validity and reliability are multi-faceted and can be applied differently in both quantitative and qualitative inquiry. In qualitative inquiry, validity is concerned with the 'honesty, depth, richness and scope of the data achieved, the participants approached, the extent of triangulation and the disinterestedness or objectivity of the researcher' (Cohen

et al, 2003, p105). Reliability can be regarded as dependability where there is a consideration over whether the data recorded in the field aligns with what actually occurs in the natural setting (Bogdan and Biklen, 1992, p48). Without a description on how validity and reliability were maintained, this research would not be trustworthy. The next section highlights how validity and reliability were considered through the lens of qualitative research in order to maintain trustworthiness.

3.6.2 Ensuring trustworthiness in this case study

Qualitative research's trustworthiness is questioned by some theorists because of the way the terms validity and reliability are conceived by positivists (Shenton, 2004). Guba (1981) uses four constructs to discuss trustworthiness:

1. credibility
2. transferability
3. dependability
4. confirmability

This section will use each term in turn, link where appropriate to validity and reliability and justify how this research is trustworthy.

Credibility is concerned with how the key findings of this study match reality (Merriam, 1998) and can be sustained and evidenced by both the data collected and the methods employed. Credibility is argued to be one of the most important factors in establishing trustworthiness (Lincoln and Guba, 1985) and, as a construct, overlaps with the term 'internal validity' used by some qualitative researchers (Shenton, 2004). Whether using 'credibility' or 'internal validity' there is a need for greater ontological authenticity whereby data can provide a different understanding on the phenomena studied; in this

case, teacher learning (LeCompte and Preissle (1993). Both credibility and internal validity are addressed by a variety of techniques including triangulation, prolonged engagement in the field, negative case analysis and respondent validation (Lincoln and Guba, 1985; Silverman, 2001). Yin describes three other analytical techniques used to maintain internal validity (2003, p36): explanation building, addressing rival explanations (similar to negative case analysis) and using logic models.

In this research, credibility and internal validity were maintained using the following techniques and processes:

1. Interviews and open questions in questionnaires were selected as they enabled rich data to be collected on teachers' perspectives on their learning (see sections 3.5.2 and 3.5.4). In contrast, closed questionnaires would not allow teachers to elaborate on their views, preventing an understanding of each teacher's perspective. The recorded, detailed descriptions from teacher participants (through either interview questions or open questioning) helped 'convey the actual situations that have been investigated and, to an extent, the contexts that surround them' (Shenton, 2004, p69). Furthermore, interviews were audio-recorded and transcribed by myself and the transcriptions validated by participants. The use of recordings allowed evidence to be revisited to avoid misrepresentation or inferences from the data. Similarly, questionnaires had opportunities for free writing so that participants could further evidence their claims and data could be taken at face value. The properties of both interviews and questionnaires justified their use as credible and appropriate methods of data collection.

2. Different methods of data collection (e.g. using questionnaires and interviews) enabled the triangulation of data, both between different participants and also for each participant. For example, if a key theme emerged, such as participants criticising formal observations as a learning activity, then this could be compared to the rest of the sample. Additionally, if an interview participant criticised the same technique then their responses could be validated with their questionnaire. This technique was used to strengthen key themes and match patterns (Yin, 2003) and to help identify data that was different.

3. Using interviews, pre-interview sheets, reflection sheets, questionnaires and document collection allowed 'multiple sources of evidence' (Yin, 2003, p36). Combined with an explicit chain of evidence using template analysis (see section 3.8 for a description of how the analysis took place), were further strategies to improve credibility by allowing readers to judge how the evidence and data formed into the key themes. Multiple sources of evidence allowed for further triangulation as discussed above.

4. Patterns and key themes are tabulated (see Chapter 4) to show how themes have been built up and evidenced meaning 'the reader has a chance to gain a sense of the flavour of the data as a whole. In turn, researchers are able to engage in comprehensive data treatment by testing and revising their generalisations' (Silverman, 2001, p241). To test the credibility of the key themes further, Shenton advocates examining previous research to establish how the results are congruent with past studies (Shenton, 2004, p69). Additionally, both Yin (2003) and Cohen et al. (2003) acknowledge that to confirm validity within constructs I would have to confirm the constructs within the literature and look for examples

that could ‘falsify my constructs’ (Cohen et al., 2003, p110). The data were thoroughly analysed, read and re-read to ensure that the findings were an accurate reflection on teachers’ perspectives of their learning.

Each technique employed above was intended to promote confidence in the credibility of the research; namely that the findings from this research matched the reality of teachers’ perspectives on their learning. Transferability of these perspectives (Guba, 1981), referred to by some as ‘external validity’ (Cohen et al., 2003, p.109) will now be considered.

Transferability and external validity are concerned with ‘generalisability’; how the research findings can be generalised to a wider population (Merriam, 1998), (as considered in 3.1) comparability of findings to other settings (Lincoln and Guba, 1985; LeCompte and Preissle, 1993) and how the data translates into, and resonates with, different cultures (LeCompte and Preissle, 1993).

For this study, transferability would mean that the findings could be used by other practitioners in different settings to improve teacher learning or to reflect on the types of activities their setting has in place and the impact of the activities on their staff. Although this study reports on a single case and context, the findings may still resonate with other settings and are not justification to dismiss transferability (Stake, 1994). Resonance, therefore, is concerned with how the findings from this study ‘resonate’ with others’ experiences of teachers’ learning and can be addressed by providing rich data for the readers to determine whether transferability is possible (Lincoln and Guba, 1985).

Contextual information that affects the research (Guba, 1981) and a description of the typicality of the environment that the research took place (Merriam, 1988), are suggestions on how to help the transferability of the findings. In this research, transferability and external validity were addressed by:

1. Providing clear information about the population in the case (for example, gender and years' experience) in order for readers to be able to relate the findings to their own context (Silverman, 2001). KHS is similar in size and structure to other schools which allows for further resonance. Additionally, sufficient contextual information gives the ownership of transferability over to the reader.

2. Using transparent, purposive sampling, in order to demonstrate a range of perceptions surrounding teacher learning. This would enable a wider range of perspectives for readers to resonate with their own contexts (Lincoln and Guba,1985).

3. Producing clear descriptions of analytical techniques (section 3.8) and tabulations of key themes (chapter 4) enables readers to establish how the findings arose; checking how comparable they are to their own context.

These techniques help improve the transferability and external validity of this research. Additionally, a single case can produce many different, multiple realities (for example this study shows different perspectives on teacher learning) and it is the understanding of the reasons behind the variations that are as useful to readers as the perspectives themselves (Shenton, 2004).

A third issue is how dependable and reliable the perspectives and, ultimately, the data are. The positivist views of reliability, that similar findings would be generated if the study was to be replicated by another researcher, do not fit with the ontology of qualitative research (LeCompte & Preissle, 1993). As this thesis has a qualitative approach, then reliability has to have a different meaning. Cohen et al. argue that reliability in qualitative research is about 'a fit between what researchers record as data and what actually occurs in the natural setting' (2003, p119). Additionally, Mason states that in qualitative research both the data generation and analysis have not only been 'appropriate to the research questions, but also thorough, critical, honest and accurate' (1992, p188). Summarising, reliability is about the truthfulness and dependability (Guba, 1981) of the findings, the stability of observations and the inter-rater reliability (Denzin & Lincoln, 1994).

Understanding reliability in this study relies on evaluating and justifying the choice of methods of data collection and analysis. There are also close ties between dependability and credibility where one cannot be present without the other (Lincoln & Guba, 1985). In this research, dependability consists of the honesty and depth of responses from the participant teachers, the fidelity of evidence between teacher perspective and their reality, and a clear explanation of the methods I employed to collect the data. An in-depth methodology allows the reader a thorough understanding of the methods and their effectiveness. Examples of how this study maintained dependability include:

1. The semi-structured nature of the interview allowed for similar questions to be asked of all interview participants (Silverman, 2000). Furthermore, the

questionnaire's semi-structure enabled 'overlapping methods' (Shenton, 2004, p71) by which teacher perspective could be collected in different ways.

2. Section 3.5 outlines the methods employed, including a summary of methods in section 3.5.6 so that readers can see the operational detail of how teachers' perspectives were collected in the field (Shenton, 2004).

3. Clear analytical techniques and procedures including coding and use of template analysis (see section 3.8) to help potential inter-rater reliability and provide a chain of evidence (Yin, 2003) that can be referred to by others if necessary.

4. Merging of the findings between the interviews and questionnaires was completed in such a way that an observer can see how key themes emerge (Yin, 2003).

Section 3.6.3 now discusses the confirmability of the data (Guba, 1981) including my role as a researcher and how it affects my study.

3.6.3 The role of the researcher: bias and power relationships

Ethical dilemmas permeate the research in terms of my role as both a student researcher and a senior teacher within the school. When the doctorate began, I was a middle leader responsible for a department but I was later promoted to a senior leader role. I made a concerted effort to keep my research and leadership roles as separate as possible to help participants see me primarily as a researcher and for them to feel part of the research process. This is described later.

In an interpretive case study, the researcher is a tool of the investigation in both data collection and data interpretation so their world-view and subjectivity can influence the research. Real confirmability and objectivity is challenging, as a researcher's bias is inevitable (Patton, 2002). My own view and perceptions could also be influential, particularly in how I interpreted the data. I attempted to address this through firstly constructing a theoretical framework to aid interpretation of the findings. To prevent researcher bias in interpretation I asked interview participants "what do you mean by that?" if I felt a particular opinion was not clear. I also asked participants to verify and validate the recordings and analysis of the interviews. Additionally, I wrote my own reflections down after each interview in order to bracket my perceptions from those I researched.

A further challenge was researching an institution in which I worked. Hellawell defined this as 'insider research' (Hellawell, 2006). As Hellawell identifies, there is not a simple insider/outsider dichotomy but a spectrum of viewpoints along a continuum. Initially, I thought I would be an "insider" as I taught and learnt at the same institution as my participants. I also assumed my view on teacher learning would be similar to those that I was researching. In reality, the situation was more complex. Although I worked alongside the participants, because of my senior role I had a different perspective of teacher learning as I was privileged to see how professional development was set up within the school and how it is led. Additionally, as I elaborated in chapter one, I was critical of the school's approach to the professional development and learning needs of its teachers. My position in the school allowed me to be critical whereas very few teachers had ever relayed their criticism (through course evaluations or via the senior team) of the school's approach to teacher learning.

Although my critical stance was a catalyst for my research in the first place, I could not share this position with my participants. Firstly, this would undermine the senior leadership team; something I was not prepared to do. Secondly, it would bias the research and possibly skew the data into becoming a platform for grievances about current practices. It was important to collect a wide range of perspectives and many participant teachers may be satisfied in the quality of their own learning. If participants genuinely felt their learning was not effective then I wanted to know the information came from them, rather than the participants feeling like it was something I wanted to hear. Their perspectives needed to be taken at face value and my interpretation needed to be based solely on the evidence presented and not through inferences nor my own perspective on teacher learning.

As I was a recent addition to the senior leadership team, the power relationships present could not be under emphasised or under played. The potential problems could be that participants downplay their true perception of their learning for fear of being seen as overly negative to a senior member of staff. Participants may want to appear to be supportive of the learning in the school (as described in chapter one) and be overly positive about learning opportunities that, in their reality, they did not support. These problems could cause the data to be less credible and not reflect the true perceptions of the teachers in this study. Reflexivity was one method in dealing with power relationships and researcher bias in analysing and interpreting the data. I used the following different techniques in order to lessen my impact as a senior leader:

1. I corresponded via university e-mail rather than school e-mail so that the participants saw the research originated from the Open University rather than at the behest of the senior team.

2. I wrote frank reasons for my research (see appendices F1 and F2), in plain English, for example in my initial letter I claimed I was a “secondary school teacher”. This was to take the focus away from my role as a senior leader and to promote an element of collegiality between myself and the participants.

3. I positioned myself as one of the group. I stated in my letter that I am interested in teachers’ learning, the participants and their experiences. This statement was intended to promote a mutual respect for teachers’ views on their learning and that I cared about their responses.

My position, when viewing teacher learning both professionally and as a researcher, may well align with the participants due to the shared culture and experiences in the case study school (Harré et al., 2009). Being part of the community allowed me to understand the use of particular colloquialisms for example “twilight” meant formal training sessions held after school hours. Understanding the context of the school as an advantage had to be balanced carefully with reflecting on how my role affected the data collection. Consideration was also given to my interpretation of the data, as described above. Outlining my own predispositions in chapter one forms part of my reflective commentary and is also a key criterion for confirmability (Miles and Huberman, 1994).

Trialling research methods allowed me to consider bias further. The initial study, in 3.7 was a platform to practise interpretive methods and consider further ethical dilemmas.

3.7 The initial study

3.7.1 Purpose of the initial study

The initial study, an integral part of this doctorate, was designed to explore the meaning of the terms "teacher learning" and "professional development" using a focus group approach. The aim of the initial study was to provisionally explore how participants discussed their experiences of teacher learning with each other, to elaborate on their perceptions of what teacher learning was and to describe the different types of activity they have learnt from. As some forms of teacher learning are difficult to articulate (Shulman and Shulman, 2008) the focus group was able to trial questions about experiences to see the type and quality of data that would be generated. The focus group consisted of newly qualified teachers (NQTs) and the study explored their perceptions and experiences of teacher learning and professional development. Appendix I elaborates the methodology, discussion and analysis of the initial study. Section 3.7.2 shows the impact of the study on the main research.

3.7.2 How did the initial study impact the main research?

The initial study offered an insight into techniques that can potentially explore teacher learning. The focus group was a vehicle for testing and questioning some methodological and conceptual concerns I had.

1. *Was the focus group an appropriate method for collecting data about teacher learning?*

   The focus group enabled a broad range of opinions about teacher learning to be collected. It was challenging to see how each person's view was their own and it was evident to see some 'groupthink' (Boateng, 2012). Interviews, although more time consuming than focus groups, will offer more personal views.

2. *What did the focus group data tell me about teacher learning?*

My research concerns all teachers, not just newly qualified teachers. The participants' comments concerning "grumpy old men" in the staffroom made me reflect on the sample I choose for my main research. I needed to seek out as many different perspectives on teacher learning as possible and so a teacher's attitude to learning was important. The group selected were from five different departments and yet their discussion on learning was not subject specific. Consideration of years teaching experience may offer a wider range of perspectives than attempting to sample from different departments.

3. *How did my role affect the data collection?*

The participants were relaxed and discussed a wide range of issues. I had little dealings with the participants which could reflect the minimal impact on my role as a researcher compared to my role in the school. Further detail on the analysis of the focus group can be found in Appendix I. The process of analysis of the data from the main study is now discussed in section 3.8.

3.8 Choosing an appropriate method of analysis

3.8.1 Choosing an approach

An interpretive, case study approach to data collection led to the accumulation of rich data. The wealth of information needed an analytical approach that enabled key themes to be identified and linked to the research questions. Saldana defines a theme as 'an extended phrase or sentence that identifies what a unit of data is about and/or what it means' (2013, p.175). Themes consist of ideas represented by participants in interview, that explain what is happening, summarise what is going on or suggest why something is

done the way it is (Rubin and Rubin, 2011). The overarching aim of analysis was to identify the themes, under the boundaries set by each research question, in a coherent narrative (Saldana, 2013).

Basit (2003) emphasises the creativity needed to analyse data from interpretive methods. This involves 'working with data, organizing it, breaking it into manageable units, synthesising it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others' (Bogdan and Biklen, 1992, p.145). Marshall and Rossman (1999) describe that typical analytical procedures fall into six phases: '(a) organising the data; (b) generating categories, themes and patterns; (c) coding; (d) testing the emergent understandings; (e) searching for alternative explanations and finally writing the report' (1999, p152).

Grbich (2007, p.32) suggests a process of 'reducing the data into meaningful groupings which are easier to manage' which is similar to the starting point of most thematic analyses (Grbich, 2007; Cohen et.al, 2003; Yin, 2003; Silverman, 2001; Bogden and Biklen, 1992) and in particular template analysis (King, 2012; Crabtree and Miller, 1998). Template analysis involves the development of a coding template to block data into meaningful and useful chunks for analysis (King, 2012). Its usefulness when exploring relationships within data and compare perspectives of different groups of people justified my choice of its use, particularly with case studies (Crabtree and Miller, 1998). Template analysis is also a transparent process by which, as a researcher, I can justify my choices of coding; not only for potential inter-rater reliability but also to limit perceived bias and improve trustworthiness in researching my own workplace.

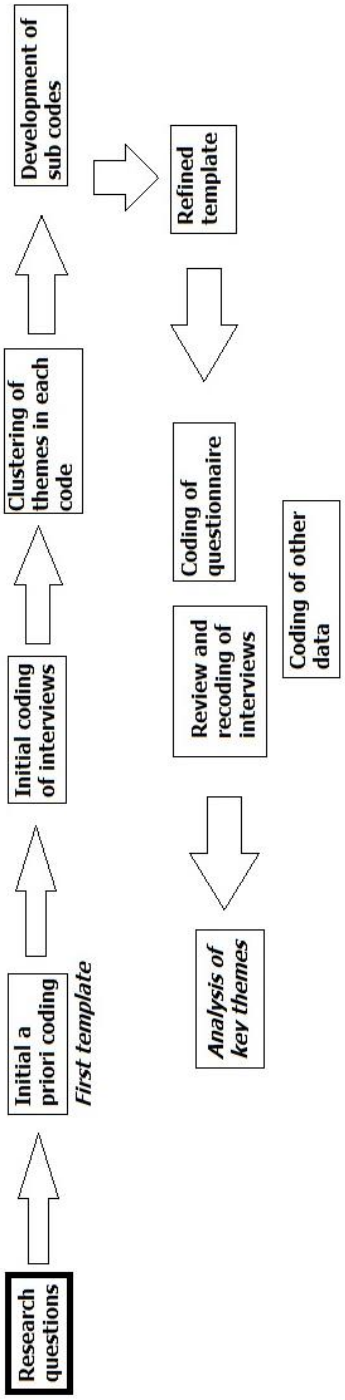
3.8.2 Template analysis

The interview transcriptions, completed questionnaires and collection of other documents created a large bank of text and data for analysis (Silverman, 2001), which needed a provisional method of organisation. The first step of template analysis was to organise the data generated.

Analysis started with the development of *a priori* codes which were modified as the analysis continued. New themes and codes were then developed in each subset of data to refine the template further. The template is a table with key themes and sub themes synthesised before the research begins. The template was then used to aid the interpretation of the data (King, 2012). The flexibility in developing and refining codes was an example of the strength of this type of analysis, however, as analysis of the data continued it was important to consider the data that did not fit the template. This "left out" data yielded other interesting interpretations that could be relevant to the research questions (Waring and Wainwright, 2008).

As shown in figure 3.1 (see p.96) the template development started with basic coding derived from the research questions. The template was applied to my first set of data; the interviews and themes were clustered around each code. From reading the data in the larger themes, sub codes were then developed which refined the template. The template was applied again to the questionnaire data. Any data that did not match the template were interpreted and new subset codes were created. Despite being a "template", the framework for analysis was fluid and changed when the interpretation revealed new themes of data.

Figure 3.1 Diagrammatic view of approach to template analysis



The next section describes how I used and applied the template.

3.8.3 Using and developing the template

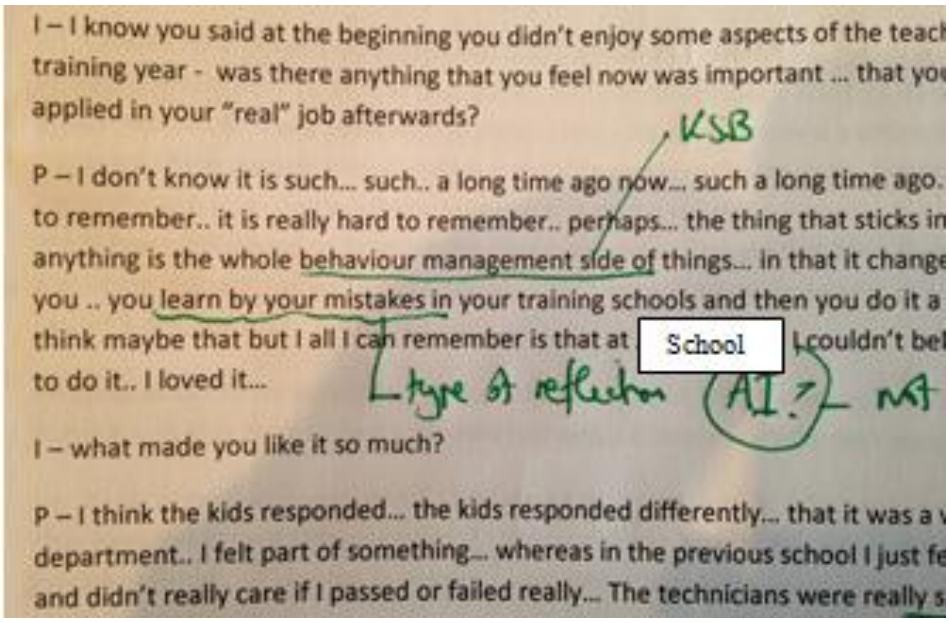
Using key themes from the literature review, linked to the research questions, a table of initial coding was set up:

Table 3.5 Initial coding template – sub-set codes from initial coding

Initial codes	Initial sub-set codes	Research question link
CLD (Concepts of learning and development)	A – Acquisitional model P – Participation model C – Construction model (changed to 'developmental' as analysis progresses)	**RQ1a. How do practising secondary school teachers conceptualise the terms "professional learning" and "professional development"?** **RQ1b. How do practising secondary school teachers describe their own learning and development?**
KSB (Knowledge and skills base)	SK – Subject knowledge PK – Pedagogical knowledge ScK – School knowledge	**RQ2. What do practising secondary school teachers think they learn and develop?**
AF / AI Activity "formal" Activity "informal"	O - Observations of others C – Courses M – Meetings W – Working with others	**RQ3. What activities impact secondary school teachers' learning and development?**

The interview transcripts were then coded. An example of how the initial main codes were developed can be seen in figure 3.2 (see page 99)

Figure 3.2: An example of initial coding



Two sections of text have been highlighted to contain data that are relevant to a section of the template:

1. Initial code KSB – identifies a section of text that discusses how the participant feels that behaviour management is part of a teacher's skills base that "sticks in her mind".

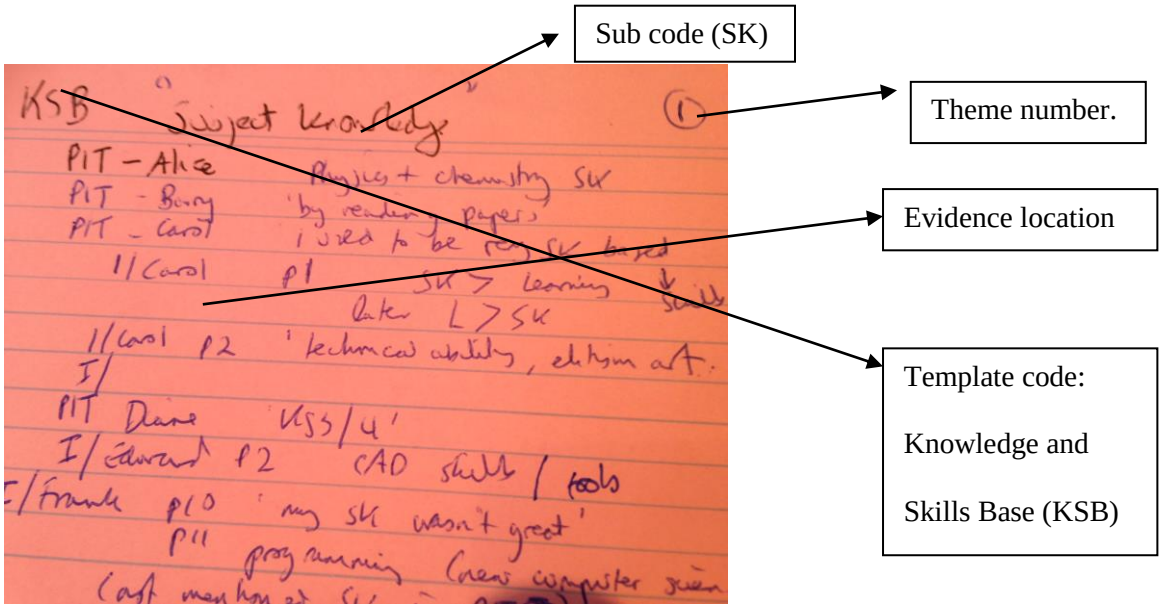
2. Initial code AI – the participant discusses how mistakes made in training form a part of an informal activity that influences learning.

After all six transcripts were coded (using the initial codes in table 3.5) the sections of text were revisited, re-read and interpreted. This allowed further sub categories to emerge from data and formed the basis of further analyst constructed typologies to form (Patton, 2002, p.393). I practised coding manually. A tension with coding, described by Cohen et al. (2003, p.283), is that there is a tendency for researchers to 'atomise' the data and 'lose the synergy of the whole'. To avoid this, and also promote credibility, I annotated parts of the transcript with themes that were not categorised but were

interesting. I attempted to change and refine the coding as the analysis continued. This promoted credibility and dependability (as an insider-researcher) by allowing new perspectives to be highlighted and not hidden through a rigid template. The template was altered to incorporate the new themes that arose from the data. An example of additional categories arose when participants considered learning about management; there were not initially any categories that covered this theme. I created a new sub category and then revisited transcripts as more patterns come to light particularly when analysing data *between* transcripts as well as *within* transcripts.

Comparing the data between interviews (inter-interview) needed a process that could view the data holistically and create categories based on common themes throughout all six interviews (King, 2012). Data from participants were collected and organised on coloured card. Each time a piece of data was read it would be written on a card that matched the theme. Each theme had a different colour. If no theme was available a new theme would be written on a new piece of card. Figure 3.3 (on page 101) demonstrates how the category “knowledge and skills base” and the sub category “subject knowledge” were populated with data.

Figure 3.3 Evidence of merging coded interview data to create distinct themes.



The interviews, as a source of rich data, allowed the basic template to be tested. Data from other sources like the questionnaire could now be matched to the coded themes from the interview. The questionnaire became a source of both detailed and "shallow" data.

Detailed data was sourced from open questions and "shallow" data from closed questions, for example:

4. Consider the list below. Circle any activities that have helped your learning and development since you qualified as a teacher.

Lesson observation (Formal) **Lesson observations (informal)**

Whole school training sessions **Department training sessions**

Informal meetings with colleagues **Co-coaching sessions**

Newspaper articles

The circled words became a source of information. The other purpose of the questionnaire was related to improving credibility (see section 3.6). The questionnaire allowed the data from the interviews to be verified and compared against the wider

population of the case study school. The analysis was completed when data from all evidence points were coded and matched to key themes. Matching themes from questionnaires was not always clear. Some data from the questionnaires were easily matched to a particular theme; for example, considering teacher knowledge. Others were not as easily matched:

1. Knowledge of how to structure a lesson was classified as classroom knowledge as some staff who taught lots of different subjects may apply similar structures to their teaching regardless of the subject taught. However, knowing how to structure a lesson requires scaffolding of concepts. Knowledge of appropriate scaffolds could come under pedagogical and subject knowledge. Alternatively, some schools could require teachers to structure their lessons in similar ways across all subjects and all staff – this would require structure of lessons to come under "school knowledge".

2. Marking could be considered as subject-knowledge, classroom- knowledge and school-knowledge for similar reasons as above. It was classified as school knowledge in this example as the participants differentiated their answers clearly as marking that is required by the school. Assessment was distinguished separately despite some who may consider marking a form of assessment.

Chapter 3 presented the arguments for an interpretive case study approach to this research. Following was a section outlining the initial study and its impact on the main research. The chapter concluded with a justification of the use of template analysis. Chapter 4 now presents both the analysis and discussion of the key findings.

CHAPTER 4 PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

The first section of this chapter explores the various ways in which teachers in this study view and describe their learning. Section 4.2 views the wide variety of knowledge and skills that participants feel they learn and develop in the workplace through formal and informal activities. The activities themselves are viewed in section 4.3 with a focus on what teachers think impact their learning and a consideration of activities that have less impact.

Each section ends with a discussion relating the data to each research question in turn. Part 4.4 draws each strand together by answering each research question, examining how they are interrelated and suggesting a holistic model of secondary school teacher learning.

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4.1 How do teachers conceptualise and describe their learning and development?

Teacher learning is a complex phenomenon. This section presents the various perceptions secondary school teachers in this study have about their learning. The following research questions are addressed:

RQ1a. How do practising secondary school teachers conceptualise the terms "professional learning" and "professional development"?
RQ1b. How do practising secondary school teachers describe their own learning and development?

Interviews and questionnaires were the main source of data. Conversely, there were very little data from the evaluation sheets or other school documents concerning defining or describing perspectives on learning. Initial coding developed from the literature created a starting point in the analysis to view learning as acquisition, construction and participation (Hodkinson & Hodkinson, 2003). As coding developed, participants used terms like 'developing' and 'development' to describe their learning. Additionally, other new themes emerged from the participants' responses such as viewing learning as a change in effectiveness (Kelly, 2006; Hager, 2004). To take into account these terms, the theme names changed and new categories were added, for example 'developmental', which was not present in the initial coding. Adding new themes from the data helped improve the credibility of the research by creating themes that reflected the participants' perspective of their learning (Shenton, 2004). Illustrating further, the initial theoretical framework highlighted acquisition and participation as dominant themes from previous research. The formation of the new theme as 'developmental' arose from patterns in the language used by the participants which is elaborated further in section 4.1.2. Table 4.1 (p105) illustrates the main themes.

Table 4.1 Perspectives on teacher learning: questionnaire data.[2]

Perceive learning as…	**Teaching for 0 – 6 years**			**Teaching for 7 – 14 years**			**Teaching for 15+ years**			**Total**		
	M	*F*	*T*	*M*	*F*	*T*	*M*	*F*	*T*	*M*	*F*	*T*
Total in sample	8	13	21	11	13	24	7	3	10	26	29	55
…Acquisition	1 (13 %)	4 (31%)	6 (29%)	6 (55%)	8 (62%)	14 (58%)	4 (57%)	3 (100%)	7 (70%)	11 (42%)	15 (52%)	26 (49%)
…Developmental	6 (75 %)	7 (54%)	13 (62%)	2 (18%)	4 (31%)	6 (25%)	1 (14%)	0	1 (10%)	9 (35%)	12 (41%)	21 (38%)
…Participation	0	0	0	0	1 (8%)	1 (4%)	1 (14%)	0	1 (10%)	1 (4%)	1 (3%)	2 (4%)
…Effectiveness[1]	1 (13 %)	3 (23%)	4 (19%)	3 (27%)	3 (23%)	6 (25%)	3 (43%)	1 (33%)	4 (40%)	7 (27%)	7 (24%)	14 (25%)

M=Male, F= Female, T = Total

Other themes, including forced learning, were found within the interview data and will be discussed in section 4.1.4. The next section presents the evidence for each key theme.

4.1.1 Theme 1: Viewing teacher learning as acquisition

The perception of learning as acquisition was a dominant theme in the literature (see section 2.2.2). Within this study, 26 out of 55 teachers in the questionnaire and 3 out of 6 interviewed teachers viewed their learning as acquisition; specifically viewing their learning as acquiring new knowledge. This was demonstrated in questionnaire responses such as:

'*adding new things to the mind'* (Q73)

'*expanding and adding to our teaching toolbox'* (Q32)

'learning new stuff' (Q54)

'*gaining new knowledge to become better'* (Q71)

[1]Participants could overlap their definitions with effectiveness

[2] Percentages were calculated using the totals in the top row. They may not add to 100 due to rounding. In addition, the theme of effectiveness was overlapped with other concepts of learning.

‘*new learning on how to teach’* (Q65)

and in the pre-interview tasks:

> *‘acquisition of professional knowledge within the context of teaching and learning’* (Carol, pre-interview task)

> *‘acquisition of skills and knowledge together with personal development that overall improves a teacher’s ability’* (Frank, pre-interview task)

and finally, the interviews:

> *‘[learning] is like a kind of acquisition of skills and knowledge and I think development... it’s a lot more self-reflective and a lot more analytical because you have to put everything in the context of yourself, in terms of you. You are getting that but are you getting good at it… you have to be savagely honest sometimes, don’t you?’* (Frank, interview, p.14)

Participants in both the interviews and questionnaires used descriptive terms such as “new” and “acquire” and many participants referred to different aspects of what was being acquired; specifically referencing knowledge, skills and approaches to teaching. Using key terms (such as “new and acquire”) allowed perceptions from the questionnaires to be grouped together and percentages calculated (as table 4.1 demonstrated). Percentages in small samples can be deceptive, however, interesting patterns can be teased out; particularly related to participants’ teaching experience and gender.

It was interesting to note that 70% of experienced teachers (over 15 years' teaching) defined their learning as acquisition compared to 58% of teachers from the middling experience (6 - 14 years' experience) and only 29% of the less experience (0 – 6 years' experience). This does not mean that more experienced teachers always choose acquisitional models of learning, there are examples of teachers of all experiences and genders perceiving learning as acquisition, but to a lesser extent.

Turning to gender, 52% of all female participants considered teacher learning as acquisition compared to 42% of all males. In each strata, more females chose acquisitional models when compared to males; culminating in 100% of experienced females viewing their learning as acquisition compared to 57% of experienced males. Similarly to above, the percentage of female participants choosing acquisitional models increases as years of experience increases.

Participants had an opportunity to graphically represent their learning (see chapter 3) and the data suggested a link between participants choosing acquisitional perspectives of learning and certain features of their graph. The graphs, Figures 4.1 and 4.2 (see p108), show similar features in that both teachers show steady increases in their perceived learning over time, despite having different genders and years of teaching experience.

Figure 4.1 Female who has taught for two years.

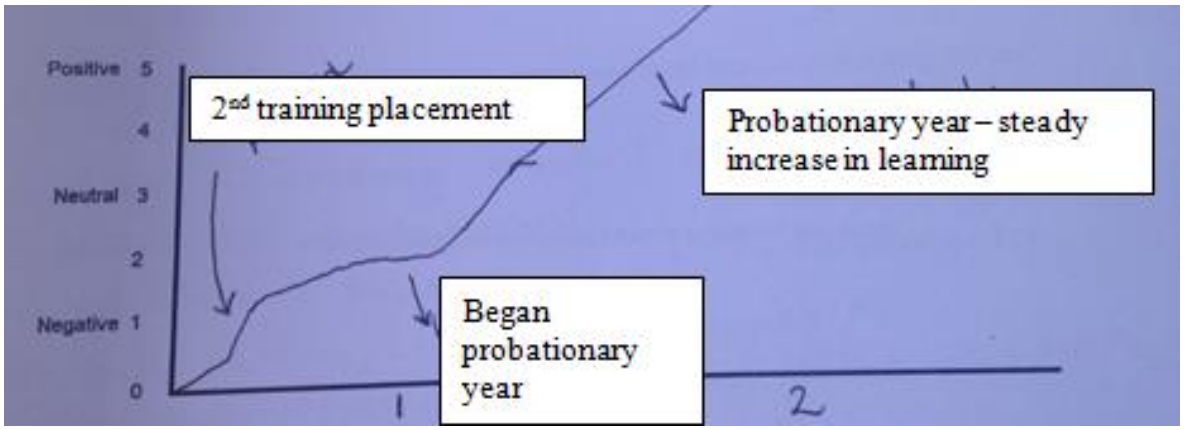
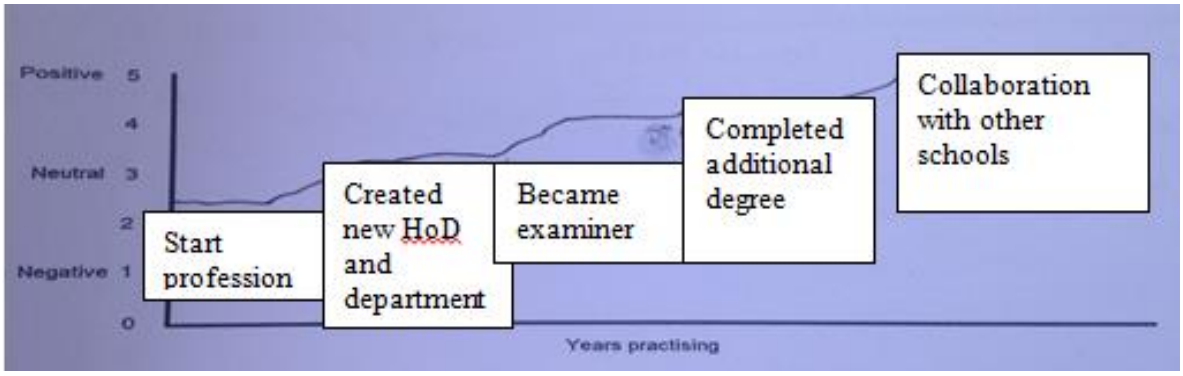


Figure 4.2 Male who has taught for 14 years (x axis not labelled)



The less experienced teacher showed her learning going off the scale of the graph whereas the more experienced teacher expresses learning as gradually increasing with distinct plateaus after key events.

A selection of four participants overlapped acquisitional learning with other themes. An example is Carol who contrasts the term learning and development. To Carol, learning is about acquiring new skills, whilst developing is about a change in her skills:

> *'…learning is obviously learning new skills and I think that developing is those skills you have learnt, you then develop those skills'* (Carol, interview, p13)

In this example, Carol's perception overlaps with the second theme of 'developmental' learning; in particular developing previously held skills. Overlapping perceptions also occur in the interviews, for example:

> '*Teacher learning is about developing your existing practice from new changes'* Q10

The data evidences that teachers perceive their learning not solely acquiring new knowledge but adjusting and developing existing knowledge. Rather than simply acquiring new knowledge and skills, teachers' experiences help them reshape and reconsider how they viewed their practice. As described earlier, using the terms used by the teacher participants, theme two views teacher learning as 'developing' or 'developmental'.

4.1.2 Theme 2: Viewing teacher learning as developing existing skills and knowledge

Contrasting with acquisition, many participants viewed their learning as "developmental". Twenty-one questionnaire participants perceived teacher learning as developing and re-constructing prior knowledge. In contrast to acquisition, teachers who perceived their learning as developing were mostly teachers with relatively less experience. Whilst only 10% of the more experienced teachers and 25% of the middling experience teachers viewed learning as developing, 62% of those with less experience did so.

In terms of gender, 35% of males described their learning as ‘developing’ in comparison to 41% of female teachers. The largest difference was in the teachers with the least experience where 75% of males chose ‘developing’ over 54% of females. In addition, there was a stark difference in female teachers with the most experience, where none chose ‘developing’ perspectives of teacher learning as they all described their learning from acquisitional perspectives.

The terms *developing* and *developmental* were chosen as the names of the theme as they featured in 15 of the 21 responses that align with the theme of ‘developing’. Further examples of the terms participant teachers used to describe their learning include:

> *‘Developing existing skills’* Q50
> *‘Continual development and improvement’* Q17
> ‘*Adapting my practice’* Q46
> ‘*Developing my knowledge, skills and understanding from my field of education through critical review and reflection* Q16
> ‘*Drawing on experiences to develop’* Q36
> *‘Linked to events in everyday practice that shape an individual through self - evaluation and reflection’* Q72

In the pre-interview data ‘developing’ or ‘developmental’ perspectives on teacher learning were more detailed. Two participants initially refer to learning in very different ways:

> *‘Society constantly changes, not linear but sporadic fashion.* (sic) *We must do two quite contradictory things; first maintain a sense of core knowledge and*

skills which will help children adapt but also adapt ourselves in order to accommodate the change. It also means to progress in terms of our knowledge of the profession' (Diane, pre-interview task)

'*Knowing when and what to improve, adapt, intervene, change, develop and abolish'* (Edward, pre-interview task)

Both the interview and questionnaire data suggest that in contrast to acquisition and other models, teachers reference 'developmental' perspectives in terms of reframing, adapting and reviewing change in their cognition or practice. During their interviews, Edward and Diane elaborate on their perceptions:

'Teacher learning is being able to adapt to instant change, unpredictable events, long term events, knowing what to do and when to do it and knowing what to develop because there are qualities in place now they might not be right for our children of tomorrow' (Edward, interview, p14)

'I think teacher learning is really focusing on progress. Like have you actually learnt or have you just ticked a load of boxes for yourself and looking at your professional practice I think it is an ongoing issue. I think that teacher learning is about seeing yourself as a professional and being aware of professional issues affecting your practice' (Diane, interview, p12)

Edward's definition showed an awareness that learning was about change but the drive for change can be unpredictable. Diane viewed learning as progress; although she doesn't explain what progress is, she sees her learning as ongoing and personal.

Additionally, the graphical representations showed how ‘developmental’ learning, unlike acquisition, was not linear but transient and changing. Figures 4.3 and 4.4 show two examples from the data:

Figure 4.3 Female, three years teaching experience

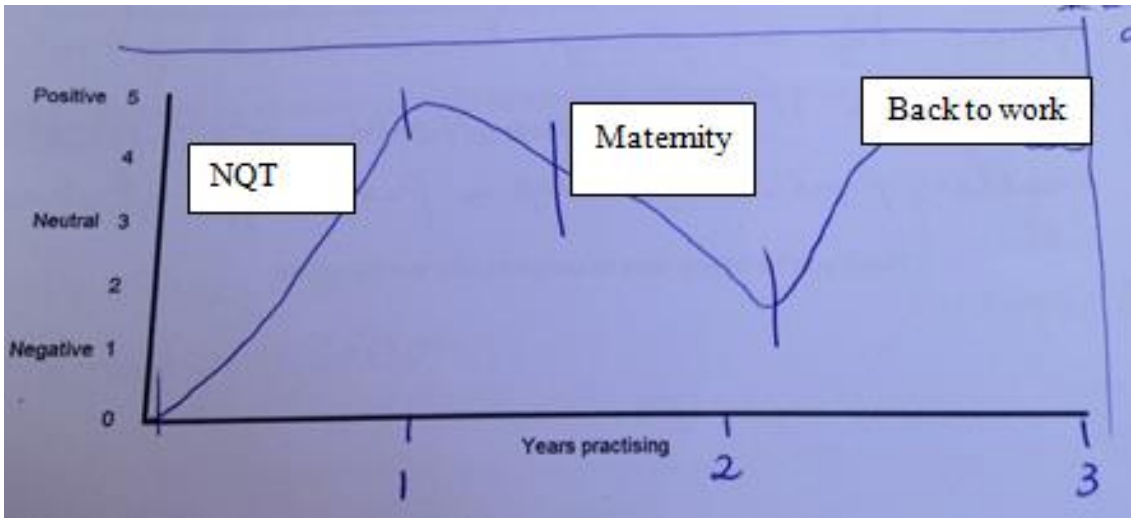
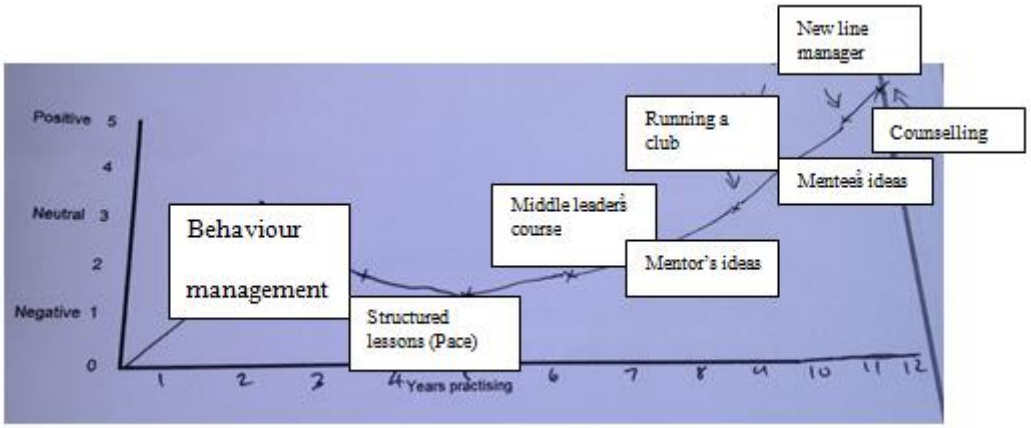


Figure 4.4 Male 12 years teaching experience



The teachers who regarded learning as 'developmental' appeared to have distinct areas where their learning and development regresses. In figure 4.3, the participant showed that whilst away from teaching, on maternity leave, her learning regressed and when she returned to work it increased. In figure 4.4, the teacher experienced a dip in learning after year two but then, through attending courses and working with a mentor, indicated that learning again took place. Each experience affected the perceived learning of the teacher.

The data suggested that some teachers in this study perceive their learning as a combination of 'acquisitional' and 'developmental'. For example, seven participants recognised that learning could come from developing and re-constructing knowledge from an acquired new experience. This suggests that the themes are not solely discrete but in some cases over-lapping.

The next key theme from the data was the perception that learning is about effectiveness.

4.1.3 Theme 3: Viewing teacher learning evidenced by effectiveness

Theme one and two evidenced that teacher participants viewed their learning through two contrasting perspectives; acquisition and 'developmental' learning. Fourteen participants mentioned a further theme of learning as effectiveness, for example:

> '*learning <u>new</u> information to become a <u>better teacher</u>'* (Q74, underline in original response)
>
> *'learning is to be effective'* (Q6)
>
> *'learning is to be a better teacher*' (Q13)
>
> *'effectiveness is how you are measured from learning'* (Q10)

Out of the 14 teachers mentioning effectiveness, four were less experienced (0-6 years); six were in the middle strata (7-14 years) and four were from the most experienced (15+ year). Forty percent of the most experienced practitioners mentioned effectiveness compared to 23% less experienced and 25% middling experienced teachers. Turning to gender, seven male and seven female participants chose effectiveness. There were very few differences between gender; 27% of males compared to 24% of females described effectiveness as a perception of learning.

Two of the 14 questionnaire participants combined elements of 'developing' and effectiveness in their definition of teacher learning. In addition, the data suggests that the two concepts of teacher learning and teacher development are difficult for participants to separate from each other, with several identifying that learning leads to development. One teacher noted that learning was the "event" that took place and the development was the "change" that then occurred. Another teacher described the idea that:

> '*teachers with no knowledge learn, teacher learning is about tweaking and improving'* (Q35).

Within the data there was a strong link to teacher change being about better teaching and effectiveness. Effectiveness and "better" teaching, however, are complex, subjective terms, and their meanings were not discussed with the teacher participants. In some examples rather than specifically citing "teaching" improvement, participants focused on self-efficacy:

'teacher development is about developing skills to become a more confident, skilled and accomplished teacher' (Q61).

Further evidence in the interviews showed that participant teachers discussed their learning in terms of their effectiveness; regardless of gender, experience and critical stance to learning. The most experienced teachers, Alice and Barry, were just as concerned about their effectiveness and learning as the less experienced teachers, Carol and Frank.

So far the data has outlined three perceptions of teacher learning; acquisition, 'developmental' and effectiveness. The final section highlights the concept of teacher learning through participation and as forced learning.

4.1.4 Less dominant themes: Participation and forced learning

The evidence so far showed three prominent themes. Further in depth analysis revealed two lesser themes: learning as participation and "forced" learning.

Despite learning as participation featuring regularly in the literature (Sfard, 1998; Hodkinson & Hodkinson, 2003), the appearance of learning as participation in this sample was rare. Only two participants (one male of 15+ years' experience, one female of middling experience) viewed their learning as participation: '*learning from other experts'* (Q55) and *'using other's* [sic] *criticisms to identify weaknesses'* (Q41) and these views considered the processes of learning rather than a definition. With such small numbers it is difficult to justify its relevance to the wider sample although the theme cannot be discounted.

Aside from participation, analysis of the data revealed that the participants had another conception of teacher learning which, drawing on the terms used by them, I have called "forced learning". Forced learning was predominantly evidenced through the interviews and pre-interview tasks due to the detailed data from the transcripts.

Forced learning featured in the first pre-interview task with Alice, who highlighted two different categories of development:

> *'Forced development – you are forced to develop your behaviour management/ pedagogy in a certain way – not much room for own development/ freedom – makes you not consider other ideas.*
>
> *Your own push on your own development. How motivated you are to develop further. This doesn't happen due to lack of time/ also working with a system. How much scope is there for freedom?'* (Alice, Pre-interview task)

Alice feels her development is driven by the needs of others. She explains that the forced development came from senior staff who pushed specific teaching techniques in the classroom:

> '*Where it was perhaps 'this is a good idea to use' it has now become 'this is the way'*. (Alice, interview, p.4)

Using examples of "group work" Alice explains how pressure for trialling this particular pedagogy forced her to develop a practice she may not have used herself.

In the interview she talked about how some aspects of "forced" development helped her; namely the idea she describes as "the three part lesson" and "green pens" (green pens are used by students to correct and modify their own work). Alice wants to be empowered

with her own learning and feels more comfortable if she is in control of what is being learned. Emphasising the individuality of her learning, she states:

> '*I see teacher learning as me – learning how to do the timetable, learning how to work with a certain child... I would see that is the learning, something new…'* (Alice, interview, p.13)

Alice links how her motivation to learning changes if she attends "training" which to her, feels forced:

> *'I think that if you go to training and you are thinking that you are not learning and you're not developing anything new then it is a waste of time... You could be told to "just do it". There is no reason behind the purpose…'* (Alice, interview, p.13)

Alice is frustrated that she is not in full control of her learning. The frustration is echoed by Barry:

> '*There is too much you are expected to do. I don't know how I can fit it all in… you are taking content down so that you have met the criteria, and criteria you don't necessarily agree with…'* (Barry, interview, p.3)

Rather than "forced learning", Barry calls his learning "tick box teaching" where teachers have set practices they have to learn and develop regardless of personal perspective on their importance.

> ‘*Some rules make sense and improve teaching, others make us tick box teachers’* (Barry, pre-interview task)

I asked Barry later to elaborate about what he meant by “tick box teachers”:

> *‘Barry talked about a set of expectations; skills and traits that he hadn’t initially learnt when he trained but are now a new expectation from SLT to be seen in what he called “good teachers”.* (Field notes: reflections on interviews.)

Barry validated this statement in his interview when he was asked about new pedagogical practices he had learnt:

> *‘There is just too many, there is too many. There is too much you are expected to do... an example is peer assessment… everything had to be peer assessed… A lot of children can’t do it… Teaching by rote as they say which Singapore seems to do very well… but it isn’t what is wanted any more.’* (Barry, interview, p.3)

Although Alice and Barry are both critical of “forced learning”, Barry conceded that some aspects were about *‘becoming a better teacher’* (Barry, interview, p.11). Additionally, Barry described how the pursuit of being the best drove him to learn. Illustrating, he states:

> *‘all we want at the end of the day is to be the best and to be good’ (*Barry, interview, p.4).

Other interview participants discussed forced development in different ways. Carol showed an understanding that some aspects of school professional development are led by external factors and influences. Carol stated that some professional development sessions were about pedagogies that concern:

> '*what is expected of you to do… you have to keep up with the current policy and procedures and the current factors…'* (Carol, interview, p13).

Carol acknowledged that there was an "expectation" of teaching in a particular way which was similar to Barry's conception of his learning as a "tick box teacher"; in short, another type of forced learning. Carol highlighted the implications to her if she did not develop in the forced way:

> '*obviously there will be consequences down the line, like capability… but you should want to develop, you should enjoy the process of developing as a teacher'* (Carol, interview, p.13).

Carol illustrated the power relationships that affected her learning and contrasted this view with a perception that learning should be enjoyable.

Forced learning continued to be seen as a concept throughout the interviews. For example, Diane recognised the influence of others on her learning. In her pre-interview task she described two types of learning, firstly the learning linked to her core knowledge of teaching, secondly what she describes as the:

> '*adaptation to accommodate the changes'* (Diane, pre-interview task)

To Diane, the adaptation she mentions is elucidated in her interview. She described how when she attended a training session about a new teaching initiative (from the school or government), her learning was affected. She described how she felt the learning was false and it was only when she had time to think over the expectations of her, did she decide how to change her practice. Both Diane and Frank had similar experiences where learning about new expectations of marking or peer assessment (which both participants referred to as "green pen") had created tension. Frank showed how some individual teachers' learning and development were driven by the needs of the school, which he termed 'tick box teaching'. Frank described training where he did not 'benefit' as he perceived the training to be irrelevant to him (in this case literacy):

> '*a lot of what we are asked to do is not really benefitting* (department) *an awful lot or you can only use it in a very small measure … there are a lot of things that seem to be whole school*' (Frank, interview, p.12)

The overall interview data suggested external pressure on the teacher participants created the forced learning and development. In all interview examples, participants, regardless of experience or gender, described how they had encountered forced learning.

The drive of "forced learning" came from different sources: from senior members of staff, from school expectations and from the drive of self-improvement. As described earlier, Carol felt that she would be punished if she did not develop the way that was expected. Contrasting, Barry had a different perspective. Despite being one of the most experienced teachers, Barry had struggled with managing behaviour. His acquired skill set was not working and he said:

> ‘*you realise that you have to change your way of teaching and teaching styles and you have to try and work on that all the time’* (Barry, interview, p.7).

In this example the “forced” element of Barry’s learning came from his own realisation that his practice needed changing. Alice too, when referencing a “forced” technique explained that:

> *‘use of the green pens have affected my marking… I would say that my marking has developed tremendously’* (Alice, interview, p.13).

Barry and Alice’s perceptions in these examples show that, despite being forced, both teachers had benefited from the new techniques; Barry with the improvement in behaviour of his pupils, Alice with the development of her marking. The “forced” nature, in these examples, did not necessarily prevent learning from happening.

This section evidenced five different conceptions of learning: acquisition, ‘developing/developmental’, effectiveness, participation and “forced”. The next section elaborates and discusses the concepts further.

4.1.5 Discussion: Linking themes and concepts from literature

The previous section highlighted the key themes from the data, which are illustrated in table 4.2.

Table 4.2 Summary of conceptions of teacher learning

Initial (*a priori*) coding	**Evidence from the interview**	**Theme from questionnaire**	**Key term and frequency in population**
CLD/ A (Learning as acquisition)	Teacher learning is about gaining new skills and knowledge.	"Learning new skills/concepts/knowledge."	**New, acquire** 55% (26/55) questionnaires 50% (3/6) interviews
Not in initial codes (Learning as developing/ developmental)	Teacher learning is about developing prior knowledge and skills to fit new scenarios.	"Learning is about developing/changing previously gained knowledge/skills understanding."	**Existing, change, refining, developing,** 38% 21/55 questionnaires 33% (2/6) interviews
CLD/ P (Learning as participation)	Teacher learning is about working with people in a community who change the way we act.	"Learning as people and colleagues finding new ways to interact."	**People, colleagues, others, experts** 4% (2/55) questionnaires 33% 2/6 interviews
Not in initial codes "Effectiveness"	Featured in 5/6 interviews	Learning is 'becoming a better teacher'.	14/55 questionnaires
Not in initial codes "Forced learning"	Featured solely in interviews (6/6)	Learning is forced on teacher.	0/55 questionnaires

Although the table separates the five themes, the themes are related and to some participants, overlap. This section discusses, compares and contrasts the different ways teachers perceive their learning.

Chapter 2 discussed the changing conceptual models of teacher learning and highlighted, through the literature, that teacher learning could be conceived through metaphors such as acquisition, re-construction or as participation (Sfard, 1998; Hodkinson & Hodkinson, 2005; Hager, 2008). The data supported the existence of these metaphors and also suggested that teachers in this study viewed learning slightly differently. Whilst

participant teachers (irrespective of length of teaching experience or gender) referred to their learning in relation to acquisition they made less direct reference to re-construction and participation. Only two participants viewed learning as participation, compared to 26 teacher participants viewing learning as acquisition and 21 viewing learning as 'developing'. The reason for this could be teachers' individual learning, meaning that participants possibly did not consider the wider school community and how it affects their learning or their place in that community.

The way participants described their learning as 'developing' overlapped with Hager's (2008) definitions of learning. Through the participation metaphor, learners were regarded initially as novices, moving from legitimate to full participation in the learning community (Hager, 2008). Hager described how learning is contextual; learners adapt their practice as their context and learning community changes. In re-construction metaphors, if the context changes, due to external or internal pressures, the learner changes rather than the organisation (Hager, 2008, p.684). This is similar to Engeström's description of activity system changes (Engeström, 2001). The learner has to subsequently reconstruct their knowledge as a result of external influences on the workplace.

The participants' use of the term 'developing' in this study was similar to the participation metaphor as 62% of less experienced staff used the term to describe their learning. Less experienced staff are new to the school and as they become involved in school life they participate in learning activities. As Hager noted, novice learners are thought to be 'gradually subsumed into the complex social construction that is an evolving set of practices' (Hager, 2008, p283). In contrast, experienced practitioners choosing developmental perspectives highlights that experienced practitioners will learn

within a community, particularly if the familiar becomes unfamiliar. The 'developmental' perspective, therefore, has links with participational learning metaphors. In fact, as illustrated in the section 4.1.2, more experienced practitioners' "development" perspective also aligns with reconstruction. Experienced learners shift and reorganise both old and new knowledge together (Hager, 2008). This allows experienced practitioners to 'develop' a new understanding of a situation. Downplaying context focuses on individual change which is a trait of construction metaphors of learning (Hodkinson & Hodkinson, 2005; Hager, 2008). Kelly describes this as 'constant and iterative engagement in constructing and reconstructing professional knowledge' (2006, p509). What makes 'developing' different from 'participation' is the focus on the individual, rather than the community (Hodkinson & Hodkinson, 2005). In both experienced and inexperienced practitioners, the term 'developing' acknowledges the change in their learning.

Whether participants felt that learning was about gaining propositional and codified knowledge or by changing and developing existing practice, each model or metaphor (Sfard, 1998; Hager, 2008) aligns with the work of Knowles (2005) who considers three different definitions of learning:

1. Acquisition and mastery of what is known;
2. The extension and clarification of meaning of one's experience; and
3. An organised, intentional process of testing ideas relevant to problems.

Despite some literature denigrating acquisitional learning as inappropriate for describing teacher learning (Schoenfeld, 1999; Hager, 2004; Hodkinson & Hodkinson, 2004), acquisitional learning strongly resonates with a selection of teachers. As illustrated in

theme one, some teachers chose acquisitional models primarily because they see learning as acquiring more knowledge and skill. As described above, the teachers that elucidated a 'developmental' perspective iterated how their previous learning was re-ordered and adapted when they experienced learning episodes. Acquiring or developing knowledge as teacher learning has strong links with experience.

The evidence suggests there was a difference in how teacher participants with varying years of experience saw their own learning. Participant teachers whose experience was greater than seven years were more likely to view their learning from an acquisitional perspective, whilst those with less experience perceived their learning from 'developmental' perspectives. Whilst it might be expected that teachers with more experience would have less to "acquire" than those with limited experience, these findings could be due to how learning occurs. When teachers who are experienced undertake learning they bring with them a wider selection of prior knowledge from previous schools and experiences. A key feature of acquisitional learning was that learning consisted of acquiring knowledge and skills (Sfard, 1998; Hodkinson & Hodkinson, 2003, 2005; Illeris, 2004) and that as teachers become more experienced the more skills and knowledge they acquire. Alice and Barry, for example, were able to talk about how their learning was different now from when they started teaching. Furthermore, in the questionnaires, more experienced teachers showed graphically how key events and learning shaped their learning over time. I would suggest that as more experienced teachers have such a wealth of experience it is harder to reconstruct such detailed knowledge. Experienced staff may have a wealth of experiences that they are familiar with and which were constructed whilst in their years of practice. Experienced staff may be able to cope to a greater extent with changes in context. As shown in both the interviews and questionnaires, when experienced staff encounter problems, they use

their experience to make judgements on how to proceed (see also Hodkinson & Hodkinson, 2003). This would lead to new knowledge being "added on" which I propose is the reason that experienced teachers think of their knowledge as acquisition. Interestingly, there are contradictions in the data when using terms to describe learning. An example is the use of "new" by the experienced teachers and the use of "change / existing" by the inexperienced teachers. Teachers who have taught for fewer years have less experience to draw on and would be expected to use the term "new" more often. In contrast experienced teachers who have practised for longer could experience less "new" knowledge. Additionally, "new" experiences could occur more regularly for less experienced teachers; leading to a greater change in their cognition.

The evidence also suggests that the learning of experienced teachers is more than acquisition, particularly as 38% of experienced teachers viewed their learning as 'developmental'. One key assumption of acquisitional learning was that the learner accumulates knowledge but the evidence in the interviews and questionnaire graphs suggests that learning does not always lead to increased propositional knowledge (Hager, 2004a). Teacher participants used words like 'competence', 'effectiveness' or 'being a 'good' teacher' as outcomes of learning rather than just gaining knowledge.

Competence and effectiveness were outcomes that 14 teachers felt arose from learning. Effectiveness linked to learning where participants viewed learning as a gradual improvement in expertise. Inexperienced teachers' expertise takes time to build as the teachers grapple with unfamiliar contexts or situations (similarly to Hodkinson & Hodkinson, 2005). Experienced teachers felt inexperienced if faced with strategies that they had not met before or external challenges from the government or the school (shown by the interviews with Alice, Barry, Carol and Diane). Even with prior

knowledge of a school, the pupils and teaching strategies, learning over time may not lead to perceived greater competence. In the case of Alice and Barry, who have been practising teaching the longest, they viewed their learning as acquiring skills and knowledge in order to become better, similar to Knowles' (2005) first definition. Alice readily acknowledged how she had changed from when she started teaching to her practice now and was honestly reflective on what some of the changes were: 'shouter and dictator' to an 'holistic approach to the pupil' (Alice, pre-interview task). Barry talked about how his pedagogical subject knowledge had changed and that he 'rarely uses textbooks now' (Barry, pre-interview task). He also emphasised that he always had a "plan B" in his head for when a lesson was unsuccessful and that it was only with his years of experience he was able to create the "plan B". The ability to cope with different situations is an example of how Kelly (2006) contrasted the learning of experienced teachers compared to inexperienced. Kelly emphasised that more experienced teachers have not simply acquired more knowledge but also have different structures of the knowledge. This suggests that more experienced teachers deal with situations in the classroom more effectively than their less experienced peers. The evidence contradicts Kelly's assertion for some experienced teachers. Barry, an experienced practitioner, is still seeking support to improve his practice from others. He describes how he watched others teach in order to bring fresh ideas back to his own classroom; to 'observe it working' (Barry, interview, p11). Additionally, changes in expectations of what is expected of experienced classroom teachers can create uncertainty in competence. For Barry this was the increased use in technology; for Alice it was the expectation that class teachers must trial group work methods. The assumption that experience leads to growth in expertise (Lohman, 2006; Wilson and Demetriou, 2007; Jurasaite-Harbison and Rex, 2011) may not be valid with all the participants in this sample, therefore, we cannot assume that all experienced teachers are competent in all practices in the classroom. Nor

can we assume that years' practicing in the classroom equates to increased competence for all experienced teachers. The evidence shows that both experienced and inexperienced teachers have areas of their practice they feel they need to develop. Learning for these teachers cannot simply be about accumulating knowledge in order to be more effective. This evidence further supports Hager's argument for additional metaphors such as re-construction whereby 'learning is an evolving process that includes the learner evolving' and 'learning involves the emergence of novelty as new understandings and/or new contexts are formed' (2008, p684). The evidence from this research shows that the new perspective of 'developmental' can both account for individual learning through social practices and seeing learning as both an outcome and a process.

Considering experience, many less experienced teachers drew learning graphs that were not linear and their answers in the questionnaire showed how their learning was shifting and changing as they encountered new experiences. Less experienced teachers, therefore, re- constructed (Hager, 2008) meaning from new experiences; cultivating expertise through reflection and action (Lohman, 2006). Hager's term of re-construction, again, overlaps with the participants' terminology of 'developmental' as both models of learning involve change in the learner through experience. Pedder and Opfer (2011) described how younger adults have a greater understanding of metacognition and other constructivist learning principles. As many experiences are new and novel to less experienced staff, this could explain why 'developmental' models are more prominent in their perceptions than acquisitional models.

So far, the two perceptions of teacher learning in this sample are acquisition and 'developmental' with learning viewed, for some, through the lens of effectiveness. For

some participants, learning more does not necessarily lead to greater effectiveness and additional evidence within the interviews suggests that both learning and perceived effectiveness is affected by the school, the government and experiences in the classroom. The interview evidence highlighted a theme of "forced learning". Two participants described forced learning as "tick box teaching" with some giving specific examples of how changing expectations by the school affected their learning. All participants mentioned "forced learning" regardless of their gender, experience or position to learning. Alice's was "group work"; Barry's was "peer assessment"; Carol's was the use of data; Diane's was differentiation; Edward's and Frank's was literacy. For example, Alice discusses her criticisms about "group work". She struggles with using a strategy in her classroom practice that she does not believe in but she has been told that it will make her practice better or "outstanding". The participants juxtaposed wanting to be a better practitioner (as prescribed by the school) with an awareness that the technique was not working for them. In the case of Diane, it was not the concept itself she was struggling with but the decontextualized approach to learning. Hargreaves describes how the decontextualized nature of this learning makes it 'grandiose' when 'personal change is constantly frustrated by organisational constraints, to intolerable guilt' (1994, p.74). Hargreaves emphasises that the guilt of not being good enough leads participants to complete the learning; as teachers' professional performance is tied in with their 'emotional lives which articulate and motivate that performance' (ibid.). As Carol states:

> '*I will always do those things because I am conscientious and I wouldn't like not to do those things…*' (Carol, interview, p.10).

"Forced learning" is part of what Hargreaves described as 'contrived collegiality' as it is 'administratively regulated, compulsory, implementation-orientated and predictable' (1994, p.195). The contrived nature of the collaborative learning practices in the school stems from the perception that some learning serves the school rather than the individual teacher. When Carol was asked why she does not challenge or question the forced learning she responds:

> '*It's a big deal for me to do the training sessions. As I get more experienced I think definitely I might be able to say quite a lot more in what I feel is right and wrong but at the minute I don't think I would be brave enough to do that. If someone from upstairs was to say to me what do you think of data management, I would say it's great*.' (Carol, interview, p.10)

Carol's statement draws attention to the power relationships in play where her learning is influenced by senior teachers. Even though Carol is unhappy with the data training session, she is unwilling to share her thoughts with the senior teachers. In addition, she states that if she had more experience she may well "say something". The evidence, however, shows that even the most experienced teachers like Alice and Barry, express their concerns in interview but ultimately do not challenge senior staff with regards to school learning opportunities. If the senior staff are unaware of the problems forced learning is causing, then they have no reason to change how learning happens. This links to my concerns in chapter one whereby the senior staff felt learning opportunities at KHS were working but the evidence in practice did not exist. Perhaps experienced staff do not challenge senior staff as they do not want to show they cannot make a technique work; Alice for example embraced the new use of "green pen" with written feedback and was particularly impressed with its effectiveness. In contrast, Barry struggled with

the technique adding to his frustration of tick box teaching. Inexperienced staff may not feel confident enough to challenge the learning. With limited experience of other contexts, the technique is new to them; it is untried and tested.

The evidence also suggests other concerns with perceptions of "forced learning". When providing learning opportunities or training for teachers, learning can be less effective if the reason is not provided. Diane discusses how senior leaders do not always explain why staff are learning something; as if understanding *why* something is important to learn is irrelevant to senior staff. For an adult, understanding *why* they are learning a concept or idea underpins the core features of andragogy (Knowles, 2005). Additionally, the creation of new ideas or personal change is proposed by Kolb (1984) as only dominant when the learner is *actively* engaged in the learning activities. The reticence of some of the interviewees to mentally engage with the imposed activities affected the quality of learning. Diane thought some of the imposed learning activities were patronising. She compared and contrasted her learning to how she perceived doctors learn. Despite being critical, Diane talks passionately about other learning opportunities that she has instigated herself. The evidence showed that self-directed learning had a greater impact than imposed learning for Carol, Alice, Edward and Frank. Barry was positively affected. He explained how he was forced by senior staff to learn new behaviour techniques. This led Barry to go and observe other teachers and in doing so he picked up techniques he thought were more effective than his original learning. At first, Barry did agree with the senior staff *why* he was asked to learn a new technique; it was only when he saw others with those skills he realised that he needed to learn those skills.

The critical stance taken by the interview participants underlines how useful interviews are as methods to accumulate rich data. The interviews offered the opportunity for the

participants to describe their reality in detail, which allowed insights into the concept of forced learning. The fact that these teachers felt able to articulate their concerns and criticise the learning experiences offered by the school suggests that they responded to me as a researcher and not as a senior leader in the school.

The impact of this discussion on professional practice is considered in the conclusion and subsequently chapter five.

The next section considers and discussed the findings about what teachers think they learn and develop.

4.2 What do teachers think they learn and develop?

Section 4.1 considered the different perspectives teachers have on their learning. This section illustrates how teacher participants describe what they feel they are learning. After evidencing and describing the key themes, this section then discusses the findings in relation to the current conceptual models of teachers' knowledge and skills.

This section answers the following research question:

RQ2. What do practising secondary school teachers think they learn and develop?

4.2.1 Key findings and themes

The data from both questionnaires and interviews were combined to form table 4.3 (on p.133). The last column of table 4.3 – what teachers feel they are still learning – was expanded to create table 4.4 which shows the chosen knowledge in relation to the teachers' experience and gender.

Table 4.3 Combining evidence to view different themes (n= number of responses)

Theme concerning knowledge base from interview	Interview participants who discussed theme	Questionnaire evidence (learnt to teach)	Questionnaire evidence (still learning and/or developing)
1. Subject and pedagogical knowledge	Alice, Barry, Carol, Diane, Edward, Frank	Subject knowledge (38) Assessment (21) Pedagogy (14) Questioning (5)	Subject knowledge (17) Assessment (18) Pedagogy (14) Questioning (5) Curriculum changes (3) Schemes of work (1)
2. Classroom knowledge	Alice, Barry, Carol, Diane, Edward, Frank	Behaviour management (43) Planning (18) Differentiation (13) Classroom management (7) Structure of lessons (9) Pupil resilience (4) Technology (3) Learning objectives (2)	Behaviour management (19) Planning (13) Differentiation (7) Child psychology (1)
3. School knowledge	Alice, Barry, Carol, Diane, Edward, Frank	School data (4) School SEN (6) IT (4) School routines (3) School marking (3) Health and safety (2)	School data (3) School SEN (3) IT(4) School marking (3) Health and safety (1)
4. External knowledge	Alice, Barry, Edward, Frank	National Curriculum (4) National Curriculum levels (3) Teacher standards (3) Child protection (2) Numeracy/Literacy strategies (2)	National Curriculum (1)
5. Role/managerial knowledge	Alice, Carol, Edward, Frank	Managing adults (2) Leadership (1)	People management (5)
6. Self knowledge	Alice, Barry, Carol, Diane, Edward, Frank	Time management (16) Organisation (9) Patience (7) Reflection (4) Communication skills (7) Voice projection (3) Dealing with parents (2) Attitudes (2) Flexibility, listening, adaptability, creativity, empathy, diplomacy, assertiveness (1)	Time management (4) Organisation (7) Patience (1) Communication skills (3) Reflection (4) Creativity, patience, adaptability, empathy (1)

Table 4.4 Relating knowledge to experience and gender.

Knowledge that is still being developed	**Number of less experienced teachers**			**Number of middle experienced teachers**			**Number of high experienced teachers**			**Total number of participants that select knowledge (n=55)**
	0 – 6 years			**7-14 years**			**15+ years**			
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	
Total in sample	**8**	**13**	**21**	**11**	**13**	**24**	**7**	**3**	**10**	**55**
Subject knowledge	6	2	**8**	2	5	**7**	1	1	**2**	17
%	75%	15%	**38%**	18%	38%	**29%**	14%	33%	**20%**	31%
Assessment	1	3	**4**	3	5	**8**	4	2	**6**	18
%	13%	23%	**19%**	27%	38%	**33%**	57%	67%	**60%**	33%

Pedagogy	1	2	**3**	3	5	**8**	3	1	**4**	15
%	13%	15%	**14%**	27%	38%	**33%**	43%	33%	**40%**	27%
Curriculum	1	1	**2**	2	1	**3**	0	0	**0**	5
%	13%	8%	**10%**	18%	8%	**13%**	0%	0%	**0%**	9%
Schemes of work	0	0	**0**	1	0	**1**	0	0	**0**	1
%	0%	0%	**0%**	9%	0%	**4%**	0%	0%	**0%**	2%
Behaviour for learning	3	5	**8**	4	4	**8**	2	1	**3**	19
%	38%	38%	**38%**	36%	31%	**33%**	29%	33%	**30%**	35%
Planning	1	3	**4**	2	3	**5**	3	2	**5**	14
%	13%	23%	**19%**	18%	23%	**21%**	43%	67%	**50%**	25%
Differentiation	2	1	**3**	1	1	**2**	1	1	**2**	7
%	25%	8%	**14%**	9%	8%	**8%**	14%	33%	**20%**	13%
Questioning	1	1	**2**	1	1	**2**	0	1	**1**	5
%	13%	8%	**10%**	9%	8%	**8%**	0%	33%	**10%**	9%
Child psychology	0	0	**0**	0	1	**1**	0	0	**0**	1
%	0%	0%	**0%**	0%	8%	**4%**	0%	0%	**0%**	2%
School data	1	0	**1**	0	2	**2**	0	0	**0**	3
%	13%	0%	**5%**	0%	15%	**8%**	0%	0%	**0%**	5%
School SEN	1	1	**2**	1	0	**1**	0	0	**0**	3
%	13%	8%	**10%**	9%	0%	**4%**	0%	0%	**0%**	5%
IT	0	1	**1**	1	1	**2**	2	0	**2**	5
%	0%	8%	**5%**	9%	8%	**8%**	29%	0%	**20%**	9%
School marking	0	1	**1**	0	1	**1**	0	0	**0**	2
%	0%	8%	**5%**	0%	8%	**4%**	0%	0%	**0%**	4%
Health and safety	0	0	**0**	0	1	**1**	0	0	**0**	1
%	0%	0%	**0%**	0%	8%	**4%**	0%	0%	**0%**	2%
National Curriculum	0	1	**1**	0	0	**0**	0	0	**0**	1
%	0%	8%	**5%**	0%	0%	**0%**	0%	0%	**0%**	2%
People management	1	2	**3**	0	2	**2**	1	2	**3**	8
%	13%	15%	**14%**	0%	15%	**8%**	14%	67%	**30%**	15%
Time management	1	0	**1**	1	2	**3**	1	0	**1**	5
%	13%	0%	**5%**	9%	15%	**13%**	14%	0%	**10%**	9%
Organisation	0	1	**1**	0	1	**1**	0	1	**1**	3
%	0%	8%	**5%**	0%	8%	**4%**	0%	33%	**10%**	5%
Patience	1	0	**1**	0	0	**0**	0	0	**0**	1
%	13%	0%	**5%**	0%	0%	**0%**	0%	0%	**0%**	2%
Communicating to staff	1	1	**2**	0	0	**0**	0	0	**0**	2
%	13%	8%	**10%**	0%	0%	**0%**	0%	0%	**0%**	4%
Reflection	1	1	**2**	0	1	**1**	0	0	**0**	3
%	13%	8%	**10%**	0%	8%	**4%**	0%	0%	**0%**	5%
Creativity	0	0	**0**	0	1	**1**	0	0	**0**	1
%	0%	0%	**0%**	0%	8%	**4%**	0%	0%	**0%**	2%
Patience	1	0	**1**	0	0	**0**	0	0	**0**	1
%	13%	0%	**5%**	0%	0%	**0%**	0%	0%	**0%**	2%
Adaptation	1	0	**1**	0	0	**0**	0	0	**0**	1
%	13%	0%	**5%**	0%	0%	**0%**	0%	0%	**0%**	2%
Empathy	0	1	**1**	0	1	**1**	0	0	**0**	2
%	0%	8%	**5%**	0%	8%	**4%**	0%	0%	**0%**	4%

4.2.2 Knowledge in the classroom

Knowledge used in the classroom was the most dominant theme in the data. Subject knowledge, assessment and behaviour for learning were the three most common parts of teachers' knowledge described by teacher participants. This was closely followed by pedagogy, planning, people management and differentiation. In the questionnaire, 38 out of 55 participants identified that they first learned about subject knowledge, and 17 of the 55 stated they are still learning about subject knowledge. Thirty eight percent of less experienced teachers stated that they are still learning about subject knowledge in comparison to 29% middling and 20% of the most experienced teachers. The greater the experience the teacher had, the less likely they thought they were still learning about subject knowledge.

The open-ended nature of the responses meant that the list of knowledge was not fully comprehensive of all aspects of teachers' knowledge. Instead, participants focused on the areas they thought were important. For example, questionnaire participants did not elaborate nor split subject knowledge into subject content and pedagogical content knowledge (Shulman, 1987) but stated "subject knowledge". There were examples of more detailed responses about subject knowledge within the interviews. An example was Edward's pre-interview task where he elaborated the skills linked to his subject that he felt he had developed in pupils:

> '*-developing pre taught skills before moving on two new ones;*
> *-developing positive attitudes and thinking skills towards failure and solving problems;*
> *-allowing time for pupils to figure out for themselves'* (Edward, pre-interview task).

All other interview participants discussed subject knowledge; both the specific content of their subject and the subject specific pedagogy that helped them teach their subject. The evidence suggested that while half of the interview participants felt that the subject specific content of what they teach had not varied, the other half talked about how they updated their subject knowledge. Barry and Carol, for example, talked about how they updated their subject knowledge through reading. The questionnaires did not evidence clearly either way whether subject knowledge changed. The questionnaires did, however, show an interesting pattern with regards to assessment, pedagogy and planning.

Linked to subject knowledge 33%, 27% and 25% of all participants feel they are still learning about assessment, pedagogy, and planning respectively (elaborated in table 4.4). In contrast to subject knowledge, a pattern emerges. The most experienced teachers felt they were learning about assessment, pedagogy and planning to a greater extent than the less experienced teachers. Even though it was not required in the questionnaire, some experienced teachers annotated their questionnaires to attempt to elaborate why they were still developing aspects like assessment and pedagogy:

'*everything keeps changing!'* (Q 14)
'*assessment is an ongoing learning journey'* (Q 50)
'*areas for development are infinite'* (Qe 18)
'*we can always learn new ways of doing something*' (Q 71)

Additionally, Alice, one of the most experienced teachers, stated in her pre-interview task:

'Pedagogy: This has developed greatly – more than classroom management and knowledge. This is what interests me most.' (Alice, pre-interview task)

Elaborating in her interview Alice stated:

> *'I think my teaching now… it's unrecognisable since that period of time. I would say unrecognisable in terms of the structure of a lesson, in the marking of books… that lesson now would look like a cover lesson.'* (Alice, Interview, p.3)

Here she evidences that the way she teaches has developed dramatically. Barry too, describes how the way he taught has changed:

> '*I rarely use textbooks now.* (sic) *Use more images and try to get pupils to think more'* (Barry, pre-interview task).

Most experienced practitioners linked changing approaches to pedagogy and assessment as a reason for their continual development. Less experienced teachers have also commented on the flux and change in their pedagogical knowledge. Two participants (one with five years', one with 34 years' experience) annotated their questionnaire accordingly:

'*Teaching is subject to constant change, reform and innovation. We are always improving and developing our practice to suit the needs of our pupils/adapt to reforms and changes in policy'* (Q42 – five years' experience)

'*Society is constantly changing and what was accepted and not accepted in the classroom has changed constantly over the last 34 years'* (Q15, 34 years' experience)

Considering all evidence, irrespective of teaching experience, teachers' felt their pedagogical knowledge changed from different influences, demands and experiences. This may explain why teachers like Diane felt they were still developing their pedagogical knowledge.

Diane described how she had learnt different pedagogical approaches whilst practising in order to cope with new situations that have arisen in her classroom. One example she described as dealing with "C/D borderliners" - students who in examinations were expected to achieve a D grade but with intervention could achieve a higher grade. Carol, a teacher with six years' experience, declared that '*I'm definitely not the same teacher I was six years ago'* and described how her understanding of pedagogy has improved much more rapidly, including '*pupil/teacher relationships, creativity, metacognition and visible learning'*. She stated that:

> '*I used to be very subject knowledge based… it is important to encourage our students to be metacognitive'* (Carol, pre-interview task).

In her interview, Carol talked about her reading and how she developed detailed aspects of her pedagogy during her training and into the first few years of her practice. Carol then discussed how she had concerns on her '*disposition'* (Carol, interview, p.3) to be a teacher. In this example she linked her disposition with her thoughts on behaviour management:

> *'I learnt lots on how to cope with the demands of the classroom and a large class group. Things like that were a real concern to me, not being very authoritative… I learnt that you don't have to go in all shouting, all guns blazing… if you have a got an exciting lesson and it is engaging even the ones that are not keen will want to have a go'* (Carol, interview, p.3).

Across the data, behaviour management was the most dominant aspect of knowledge that teachers feel they are still developing. Thirty five percent of all teacher participants felt they were still developing their knowledge of dealing with behaviour. Like subject knowledge, more inexperienced teachers chose this aspect of knowledge when compared to the middling and most experience teachers (38%, 33% and 30% respectively). The difference between most and least experience when considering behaviour is not as stark as the difference in subject knowledge. Additionally, more experienced teachers were still learning and developing their behaviour knowledge than subject knowledge (30% compared to 20%). The evidence suggests that experienced teachers are still concerned about effective behaviour techniques to be used in the classroom. Alice for example showed her concern about learning effective behaviour management techniques:

> *'the thing that sticks in my mind more than anything is the whole behaviour management side of things'* (Alice, interview, p.3).

Similarly, Barry talked about behaviour management and discussed how his classroom management had improved but '*it has got harder'*. He later elaborated that despite learning new behavioural management techniques, the process of managing behaviour had not got easier. As mentioned in 4.1, despite being experienced, Barry had to seek help to improve the way he was managing behaviour in the classroom.

Other classroom-based knowledge mentioned by teachers were differentiation and questioning. Thirteen percent of participants chose differentiation but there were no clear patterns with regards to experience and gender. Similarly, learning about questioning showed few patterns when considering experience and gender; resulting in 9% of all participants choosing this knowledge. This suggested that knowledge about questioning was prevalent regardless of experience.

Considering all of the evidence, knowledge in the classroom can be grouped into two areas:

1. Subject and pedagogical knowledge: continued knowledge of the craft of teaching incorporating the content that is taught and the pedagogy behind how the content is taught (examples from the evidence include subject knowledge, pedagogy, assessment, questioning).

2. Classroom knowledge: knowledge of generic skills used for all teachers for example behaviour management, planning, pastoral responsibility and child psychology.

In addition to the discussed types of knowledge, participants also discussed knowledge that was related to the school, in particular how some knowledge was school specific and shaped by the needs of the school. The next section considers the evidence for this theme.

4.2.3 Influence of school and external contexts on knowledge

In table 4.3 there were five areas that could be considered as school knowledge: school data, school SEN, IT, school marking and health and safety. Within these five areas, table 4.4 elaborated on how less experienced to middling experienced teachers selected this knowledge compared to zero most experienced teachers. In contrast, for IT knowledge, more experienced teachers chose this over less experienced (20% compared to 5%). School knowledge was shown by participants to be knowledge specifically for use in and related to the school. School knowledge links in with ideas in section 4.1 where the evidence suggested that interview participants felt their learning was directed by the needs of the school. Barry identified a difference between practices he had learnt in the past and new practices that he felt were expected to be used now. Barry felt he was developing knowledge specifically 'for' the school. Evidencing school knowledge further, Edward discussed how his knowledge base had changed since qualifying and adapted to what he experienced in the classroom:

> '*there was an expectation of following a four part lesson plan… now looking back I think that it was okay for certain tasks but at the time it hinders long levels of concentration for a particular subject… sometimes things take longer'* (Edward, interview, p.3).

In this example, the school has decontextualized an aspect of planning; namely planning a lesson in four parts and made an expectation that the lesson should be planned in this manner. Edward explained that although there was a school expectation to teach using a "four part lesson" he made the decision to change the way he taught, adjusting his knowledge for his class, as to him it was not working.

The school is one factor that affected what a teacher learns, other factors are those that are external influences to the school. Although not mentioned prominently in the interviews, the questionnaires mentioned knowledge such as “national curriculum” (one participant), “child protection” (two participants) and “national strategies” (two participants. National strategies were government strategies to improve numeracy and literacy in students mentioned in section 2.1). These policies and strategies were designed to shape how schools were run; schools and teachers are therefore meant to learn about the key feature of each strategy. Government policy becomes a new source of teacher knowledge. Alice, one of the most experienced teachers, was the only teacher to talk about this type of knowledge in her interview. This was possibly because she had taught for the longest period of time and has experienced more government changes and strategies. Table 4.5 shows which participants have commented on external knowledge; including the claim that change has created new external knowledge for them to learn:

Table 4.5 Questionnaire participants that evidence changing external knowledge

Mentioned changing external knowledge	**Number of less experienced teachers**			**Number of middle experienced teachers**			**Number of high experienced teachers**			**Total number of participants that select knowledge (n=55)**
	0 – 6 years			**7-14 years**			**15+ years**			
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	
Total in sample	**8**	**13**	**21**	**11**	**13**	**24**	**7**	**3**	**10**	**55**
External knowledge	4	5	**9**	6	6	**12**	3	2	**5**	26
%	50%	38%	**43%**	55%	46%	**50%**	43%	67%	**50%**	47%

As the table shows, changing external knowledge is evidenced by nearly half of all participants. As teachers' experience increases, they are more likely to mention external changes, possibly because they have experienced more change in the profession. Additionally, males tend to evidence change more than females, apart from the most experienced strata of teachers.

The next section considers knowledge about roles; that is new knowledge that participants need for changing roles within the school.

4.2.4 Knowledge about roles

Within the data a less prominent theme emerges around role and/or managerial knowledge. Fifteen percent of questionnaire participants mentioned learning about how to manage people; this included 14% of inexperienced staff, 8% of middle experienced staff and 30% of most experienced staff.

If staff had a managerial role they tended to mention aspects of managerial knowledge such as people management. For example, Alice, Carol, and Edward had managerial roles in the school and so discussed role/managerial knowledge more often than Diane and Frank.

This can be seen in how Edward described an externally held middle leader's course. He felt it was beneficial as he learnt about team work, team personalities, building rapport with adults and dealing with difficult staff. He also describes how he learnt about standardisation of examinations. Alice too, learnt procedural knowledge about her role in designing the school time table:

> *'I went on a four day timetabling course… I was able to put together the basic timetable.'* (Alice, interview, p.13)

In this example Alice was able to implement her new role-knowledge in the school. Carol also focused on learning for her new role, in particular on data analysis and using Excel. Carol struggled with the necessity of learning about data analysis when it was not where her passion lay and she felt it was not entirely necessary for her department:

> *'I would say I wouldn't be petulant enough to not do those things because I would feel I was letting the school down and SLT down unless I did them. I know I need to learn those skills to stay up to date with those skills. I do feel a lot of it is pointless but I would never tell them that'* (Carol, interview, p.10).

This piece of data not only discussed knowledge needed for roles but also evidenced Carol's conceptions of learning and development. As described in section 4.1 Carol describes how her learning is shaped by the needs of others. In this case a direction by senior staff to improve her management knowledge of data analysis. Carol acknowledged:

> *'It is a tough job isn't it? Because there is a lot to the job that is so rewarding and it is the reason we love it so much but there is (sic) bits to the job we have just got to do and we can't get round that'* (Carol, interview, p.11).

Using the terms 'bits to the job' Carol emphasises aspects of her role that she has 'just got to do' in order to complete her job as a manager.

The final key theme is self-knowledge; improving self-efficacy.

4.2.5 Self-knowledge

The final part of table 4.4 evidenced that teachers felt they were developing aspects of their self as they practised. Compared to previously discussed knowledge, the occurrence of self-knowledge traits were much lower. Examples such as time management, communication, empathy, patience and creativity were highlighted by questionnaire participants. Within the questionnaires, the three most common aspects were time management, organisation and reflection which were featured in 9%, 5% and 5% of participants' responses, respectively.

The most common aspects that most experienced teachers selected were time management and organisation. The other examples have low occurrences (for example one or two participants) and there is no real correlation between this choice of knowledge and gender.

All of the interview participants mentioned self-learning. Examples from the interviews are from Frank and Alice:

> '*I thought I was pretty hot on [classroom management] but I realised that I needed to show a lot more empathy to students to see why they were acting that way. There is still some development… I tend to be a little bit… not confrontational but adversarial to a certain extent'* (Frank, interview, p.3).

> *'I went on to do meditation through the Buddhist teachings… even the kids would always say I was different on a Tuesday… I was much more relaxed'* (Alice, interview, p.9).

Alice's example is interesting as, for her, there are two people who could be learning; the teacher person and the whole person. In this example her "whole" person learning outside of the classroom subsequently impacted her as a teacher. Self-knowledge keys into earlier evidence in section 4.1 that learning is about becoming more effective. Participants emphasise that with greater self-knowledge comes a greater confidence and self-efficacy in teaching.

The next section summarises the key themes.

4.2.6 Summary of key themes

Considering the findings so far, the following aspects of knowledge can be teased out of the data:

Theme 1. Subject and pedagogical knowledge.

Theme 2. Classroom knowledge.

Theme 3. School knowledge.

Theme 4. External knowledge.

Theme 5. Role / Managerial knowledge.

Theme 6. Knowledge of self.

Teachers tightly entwined subject knowledge and pedagogy as two key aspects of their knowledge. Theme 2 was evidenced by teachers who discussed general teaching skills (like behaviour management, understanding child psychology) that were needed to maintain an effective classroom environment. School knowledge covered knowledge specific to the school, such as marking books in a particular way or using data. External knowledge was knowledge instigated by government or national changes, such as changes to national assessment schemes. Role/managerial knowledge encompassed

knowledge needed for a particular job, e.g. creating a school timetable or learning about leadership and management. Finally, self-knowledge was focused on empathy, timekeeping, patience – traits of the whole person as well as the 'teacher' person. The next section discusses the key themes.

4.2.7 Discussion of themes

Teacher participants offered an insight into what they feel they are still learning and developing. Each aspect is important and offers an indication of what the teachers perceive are the key parts of their knowledge base. The teacher participants at KHS describe their knowledge in both similar and contrasting ways to the theoretical models presented in chapter 2.2 (Shulman, 1987; Borko and Putnam, 1995; Banks et al., 1999; Cochran-Smith and Lytle, 1999).

Firstly, dominating both the interview and questionnaire data were examples of both pedagogical and subject knowledge. Subject knowledge, that is knowledge of the specific subject a teacher teaches, featured dominantly with less experienced teachers. As teachers become more experienced, they can build up a body of explicit knowledge related to their subject. Interestingly, in the case of pedagogical knowledge, the pattern is not as simple. The literature describes many overlapping theories of pedagogical knowledge. Shulman (1987) included general pedagogical knowledge and pedagogical content knowledge; where general pedagogical knowledge contained the strategies that transcended subject matter and pedagogical content knowledge (PCK) was specifically about the methods of teaching a particular subject. Borko and Putnam (1995) and Banks et al. (1999) separated the pedagogical from the subject to create different categories that interrelate. The literature's picture of pedagogy and subject knowledge was complex. The participants, however, viewed subject knowledge as one aspect and the pedagogy

separately; as the way of teaching the content. This was evidenced in how experienced teachers described both their pedagogy and subject knowledge.

The evidence suggested that many more experienced teachers felt they were developing their pedagogy (as well as assessment and planning) compared to the less experienced teachers. Contrasting starkly with subject knowledge, many more experienced staff must therefore feel less secure in their pedagogical knowledge. Part of the explanation for this is down to the complexity of pedagogy. Whilst aspects of subject knowledge are explicit, some aspects of pedagogy are implicit. Put simply, the craft of teaching a subject can be fluid where teaching techniques can work for one class/subject/time frame and then be less effective for a different class/subject/time frame. Participants were aware that pedagogy changes and this was evidenced in both the interview responses and the questionnaires. Barry, in particular, who, with a wealth of experience, still sought out new knowledge by watching other teachers is an example. Although more experienced teachers cope with a wider range of challenges (Kelly, 2006) the evidence suggested that changing expectations from the school and external sources affects the perception of what is "good" in the classroom. This, in turn, explains again why more experienced teachers seek out new pedagogical knowledge. References to subject and pedagogical knowledge were tightly entwined as most teachers use their pedagogy to teach their subject/s. A secondary school teachers' subject is the pivot around which other aspects of learning takes place particularly as knowledge change originates from perceived problems in the classroom (Cochran-Smith and Lytle, 1999).

Although in the interviews both subject and general pedagogical knowledge were linked, other themes are discrete. General classroom skills, for example, can be applied to all teachers in any classroom; behaviour management, child psychology, knowledge of

pupil's contexts (Shulman, 1987). Behaviour management stood out in the data as participants were more concerned with behaviour management than any other form of knowledge. Similar to subject knowledge, more experienced teachers mentioned behaviour less than less experienced teachers. Compared to pedagogy this is interesting. Behaviour management, like pedagogy, can contain implicit knowledge and explicit knowledge. Explicit knowledge could be particular techniques to use with challenging pupils. Implicit knowledge could be how the technique works for different pupils at different times/situations. This means that behaviour management consists of both knowledge and skills. The knowledge of behaviour techniques versus the skill to implement the techniques in different contexts. For more experienced teachers to feel they are developing this aspect to a lesser extent than the inexperienced teachers could mean that, over time and unlike pedagogy, an experienced teacher becomes more effective at managing behaviour. Perhaps, unlike pedagogy, fewer changes and new ideas affect the bank of behaviour strategies experienced teachers employ.

The effect of changing knowledge was evidenced strongly through the findings, producing data that suggested the presence of both school and external knowledge. Banks et al.'s (1999) model included a similar aspect that was entitled "school knowledge".

Banks et al.'s model elaborated how school knowledge is where subject knowledge is transformed for use in schools. In this study, school knowledge was similar to Banks et al.'s (1999) model in that participants discussed knowledge specifically for school (for example marking books in a particular way) but differed in that participants focused on pedagogical, rather than subject, knowledge. The decontextualized approach to

pedagogical knowledge taken by the school created both the "forced" learning in section 4.1 and the comments of continual change mentioned by half of the participants.

The findings illustrated three more facets of knowledge: external knowledge, role/managerial knowledge and self-knowledge. These three themes could be considered interlinked to some extent with Banks et al.'s (1999) "personal subject construct", however, their dominance in this research differs. The most dominant theme of the final three is that of self-knowledge. Elements such as "time management", "creativity", "communication skills" and "organisation" begin to blend into self-efficacy (Bandura, 1977). In particular, some aspects of self-knowledge were about motivation to learn (Eraut, 2004; Knowles, 2005) leading to a greater confidence in practice and was a step towards effectiveness.

The final two themes were external knowledge and role-knowledge. External knowledge overlaps with knowledge of educational contexts (Shulman, 1987). Role- knowledge is a category that does not feature in the literature models. This knowledge depends on the type of role the teacher has and has been evidenced from both the interviews and the questionnaires: particularly with regards to people management and leadership. More experienced teachers tended to choose this type of learning as they were more likely to hold managerial roles that needed this knowledge. Aside from management, teachers with specific roles explained how they needed further learning to help them manage their work. When curricula or policies changed, participants elaborated how they would have to catch up on the changes. The fluidity of knowledge, in particular changes that lead to new learning, contradicts objectivist models of teachers' knowledge that are static and unchanging (Shulman, 1987).

In summary, the six aspects of teachers' knowledge from this study can be interrelated and merged to form three categories of secondary school teachers' knowledge:

1. Teachers' primary and most dominant concern is their subject and pedagogical knowledge. This may involve subject specific pedagogical knowledge and/or assessment regimes to assess student learning. Teachers see this knowledge as fluid, changing from three areas: teachers' knowledge-in-action of what they perceive is working for students, a direction for a specific practice or new pedagogical approach from the school and external pressures from Ofsted or other influences that change what is perceived as "good" teaching.

2. The second category overlaps with the first and that is the view of general classroom knowledge. This conflates school knowledge and classroom knowledge – some knowledge in the classroom is a result of the teacher's learning in the school, for example a school specific behaviour policy. This could include general behaviour techniques, a particular school data or monitoring system, learning about specific policies and child protection practices and school/national protocols for dealing with students with special educational needs.

3. Finally, the last category is not as explicit as the previous two. This category covers both the knowledge required for specific roles and self-knowledge. Self-knowledge is complex and implicit. Knowledge implies that something can be learnt. Building empathy, for example, would require a variety of experiences and practice and is not explicit in nature. The use of the term "knowledge" adds to the complexity of this category. Could every teacher learn to be "creative"

(from table 4.4)? Is creativity necessary to practice effectively or is it actually a skill? In essence, self-knowledge links to role knowledge. Role knowledge features more prominently with more experienced teachers; particularly if they are new or less experienced in a management role. Rather than two categories, Eraut (2004) classifies both self and role knowledge as performance. Performance is firstly linked to how teachers act under pressure. Teachers react quicker and more intuitively with experience. This category is the "outcome" of experience. Self and role knowledge develop with commitment, agency and motivation (Eraut, 2007).

The three categories led me to reconsider teacher knowledge and design a new typology with which to view teachers' knowledge which will be elaborated in 4.4. Before that, the findings related to the final research question will be discussed.

4.3 What activities impact a teacher's learning and development?

So far this chapter has considered how teachers conceptualise and describe their learning and also the key domains of teachers' knowledge. This section analyses data that describes different activities that affect teacher learning.

4.3.1 Key sources of evidence

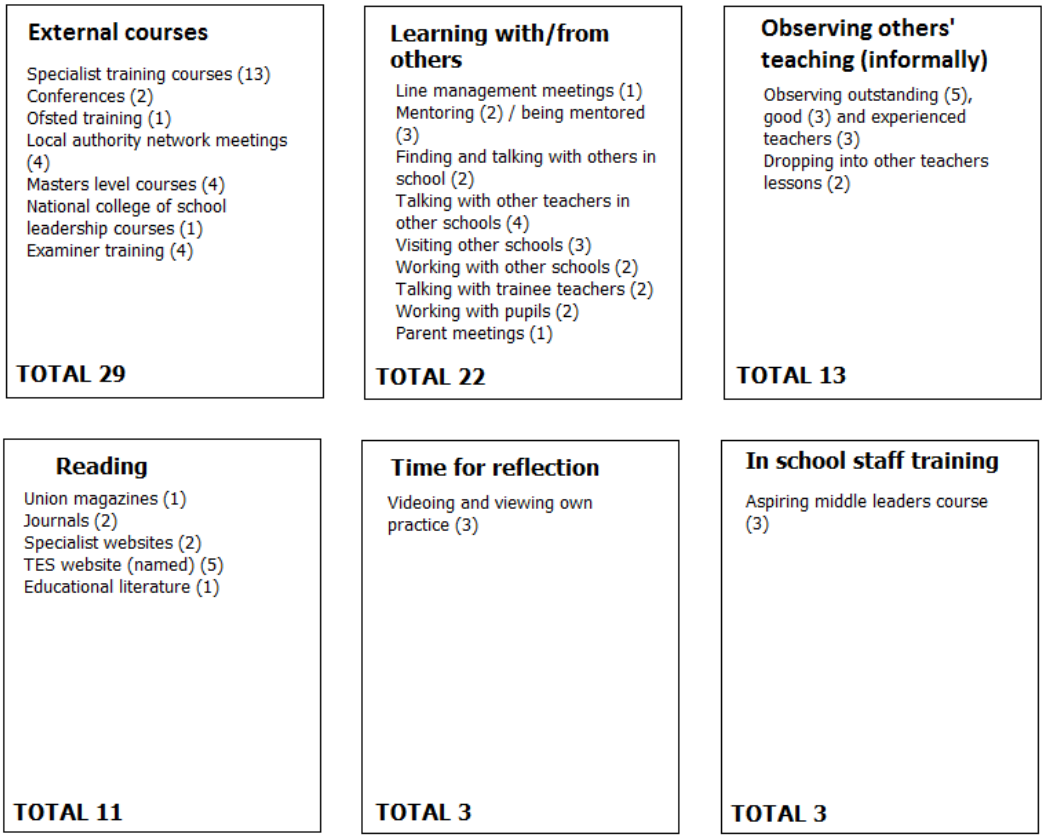
Within the study, teacher participants had the opportunity to describe events and activities that affected their learning. Activities were placed into two groups; events that promoted teacher learning and events that were not as effective. The next part of this section will briefly present a selection of tabulated findings. The findings will be discussed further in the subsequent section. Table 4.6 (on p. 153) considers the data from the closed questions in the questionnaire:

Table 4.6 Teacher perspectives on teacher learning activities: closed question.

Activity that could be selected	Number of less experienced teachers			Number of middle experienced teachers			Number of high experienced teachers			Total number of participants that select activity (n=55)
	0-6 years			7-14 years			15+ years			
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
Total in sample	**8**	**13**	**21**	**11**	**13**	**24**	**7**	**3**	**10**	**55**
Formal lesson observations	7	9	**16**	6	12	**18**	5	3	**8**	42
%	88%	69%	**76%**	55%	92%	**75%**	71%	100%	**80%**	76%
Informal lesson observations	7	10	**17**	5	12	**17**	4	2	**6**	40
%	88%	77%	**81%**	45%	92%	**71%**	57%	67%	**60%**	73%
Whole staff training	4	7	**11**	2	12	**14**	5	2	**7**	32
%	50%	54%	**52%**	18%	92%	**58%**	71%	67%	**70%**	58%
Department training	4	9	**13**	3	10	**13**	5	3	**8**	34
%	50%	69%	**62%**	27%	77%	**54%**	71%	100%	**80%**	62%
Informal meetings and talks with others	7	13	**20**	6	13	**19**	7	3	**10**	49
%	88%	100%	**95%**	55%	100%	**79%**	100%	100%	**100%**	89%
Co-coaching	3	4	**7**	4	6	**10**	2	0	**2**	19
%	38%	31%	**33%**	36%	46%	**42%**	29%	0%	**20%**	35%
Newspaper and journal articles	2	3	**5**	1	3	**4**	1	2	**3**	12
%	25%	23%	**24%**	9%	23%	**17%**	14%	67%	**30%**	22%

In addition to the closed question, participants were able to elaborate other activities that were not featured in the table. It is interesting to note that some activities are repeated from the first question, despite participants being asked to list activities that have not been included. Figure 4.5 (on p.154) consists of boxes of similar activities (grouped by myself). The numbers in brackets show the occurrence of each theme:

Figure 4.5 Activities that arose from unstructured questionnaire answers



The next source of data was an opportunity to elaborate on a key event that has affected the participants' practice. The semi-structured nature of the questionnaire allowed participants to write a short narrative about their learning; the interviews were also considered. Each narrative was read and placed in one of the themes on page 155:

Table 4.7 Teachers describing key learning events in both questionnaires and interviews: unstructured and open responses.

Activity	**Occurrence of theme Interview (n=6)**	**Occurrence of theme Questionnaire (n=55)**
External (to school) courses	5	11
Learning with others (informally)	6	26
Observing others teaching (informally)	5	16
Observed formally by others	3	7
Time for reflection	5	2
In school staff training	6	2
Pupil feedback	4	1

The two tables and one figure presented are three different lenses to view the same evidence: table 4.6 originated from structured questions where both table 4.7 and figure 4.5 shows data from unstructured questions. Perspectives can therefore be compared. To illustrate, informal meetings with others was a dominant activity in table 4.5, a similar category arose in figure 4.5 “learning with/from others” and finally 26 participants describe learning with others in table 4.6. Cross referencing these similar activities shows the relevance of informal learning to participants; particularly as the theme is present in all three sources of data.

Each key learning activity will now be presented in turn.

4.3.2 Informal learning with others and individually

Eighty nine percent of participants selected informal meetings and talks with others from the list of activities. Interestingly, the sample consisted of every female participant and every most experienced teacher. Ninety five percent of the less experienced teachers chose this category compared to 79% of middling experience; demonstrating a dip in the

number of participants choosing this category as experience increases. The six participants that did not select this category were all male; with five between 7 and 14 years' experience. This type of informal learning, therefore, is valued by the participants; a claim which is further substantiated through considering the more detailed evidence.

In total, 22 participants elaborated what constituted informal learning with specific examples such as:

> *'informal talks about subject knowledge after the main business of the department meeting has finished'* (Q61)
> *'seeking out others who are more experienced'* (Q6)
> *'working in formal study groups with other teachers'* (Q10).

Lohman's (2006) definition of informal was used to classify activities, where the informality of these activities are due to teachers initiating the activity themselves; focusing on their immediate learning needs. A caution, however, is that classifying activities as formal or informal can be contrived.

Participants evidenced how informal learning, sometimes unplanned, emanates from formal events for example line management meetings, talking and mentoring trainee teachers and parent meetings. For example, two most experienced teachers discussed how less experienced staff and trainees gave them new ideas for their own practice as well as helping the trainee develop. The learning relationship becomes symbiotic whereby learning is a two way process between mentor and mentee. This type of learning activity was more prominent with more experienced teachers. Experienced

staff, due to their knowledge of teaching, are more likely to be mentors than less experienced staff.

As well as mentoring, informal learning can happen within other formal situations. Both Barry and Frank in the interviews discuss how, initially judging their formal courses to be poor quality, they learned more from the unplanned experiences that took place than the course itself. Participants emphasised how the act of collaboration helped contextualise the learning and made it useful for the classroom. Carol talked about ensuring she used the practice she had learnt in order to embed the learning in her practice:

> *'I think you learn better if you are collaborating and sharing good practice then* [sic] *if you say… learn from things in a book… you might have a good tip on coaching or something and it's gone if you haven't shared it or used it'* (Carol, interview, p.7).

I asked Carol what she meant by "used it":

> *'learning only takes place if you have used something… or if you have made it happen… I think by sharing it and embedding it into the department or whole school it becomes a learnt thing'* (Carol, interview, p.8).

Further examples within the data highlighted that by working and talking with colleagues in similar, if not the same, contexts gave teachers ideas (or different perspectives) to trial in their own practice. There were participants, in contrast, who found the informal collaboration challenging. For example, Alice explained that she was

not very good at learning with others and she would prefer time on her own before discussing with others:

> *'I don't think I am very quick in picking things up so I would need time to do it, to get my head around it on my own… If I were sitting around a table and had something to read and make a judgement on it there and then… I would find that difficult'* (Alice, interview, p.7).

Although Alice emphasises the individuality of her learning there is strong evidence to suggest that formal courses outside or within the school gives opportunity for colleagues to talk and learn informally together.

Colleagues are not the only source of informal learning. Two questionnaire participants and four interview participants discussed how pupils affect their learning. The learning from students happens in a variety of ways. Alice emphasised directly learning about pupils from their writing:

> '*the way in which [students] write things and the clarity and lack of clarity in which they write… I think that, within the last couple of years, has informed my teaching more than it used to'* (Alice, interview, p.8).

Whereas Frank described how both confrontations with students and trial and error in his practice has helped him learn about what works best for his pupils, Barry's learning was different. Experiencing poorly behaved students caused indirect informal learning as Barry sought out experiences from other teachers to help him cope. By informally

working with teachers who taught the pupils Barry was able to learn explicit techniques that were portable to his practice.

The difference between Barry and Alice's learning is that Barry chose to seek an activity to help him whereas Alice's learning happened during her day-to-day practice. This idea of "seeking" learning chimes with the data where participants' experiences in the data show that whilst some informal learning is sought out by the teachers (for example the two participants who found and talked with other) there are participants whose learning happens serendipitously through everyday practice and experiences.

The final key activity within this category is based around individual informal learning, namely reading. Reading as a learning activity occurred in 22% of all the participants with a greater number of more experienced teachers and also female teachers reading. Within the unstructured data, 11 participants elaborated examples of reading with five teachers using the Times Education Supplement (TES). The three most experienced teachers read from educational journals and literature. There is a difference in the teacher participants' choice of activity: less experienced teachers were choosing TES resources whilst more experienced teachers were reading educational literature; additionally evidenced through formal courses. Two participants cited specific educational theorists that had influenced their practice which they had encountered during reading.

The blending of formal and informal learning activities occurs regularly within this study; particularly with regards to lesson observations.

4.3.3 Lesson observations

The second dominant learning activity from the data was lesson observations. Observations are grouped into two categories: formal lesson observations set up as part of an appraisal and informal lesson observations initiated by teachers themselves. Seventy six percent of participants selected formal observations whilst 73% selected informal observations. An additional pattern shows that slightly more experienced teachers chose formal observations in comparison to less experienced teachers (80% compared to 76%). In contrast, more inexperienced teachers chose informal observations over more experienced teachers (81% compared to 60%). Inexperienced male teachers favoured observations over females whilst conversely more experienced females favoured observations compared to males. Whilst all teachers undergo formal lesson observations as part of appraisal it is possible that a greater percentage of less experienced teachers choose informal observations as they often seek out experienced staff to watch their practise.

The evidence showed teacher participants in both questionnaires and interviews talk about informally observing others to see good practice, team teaching, watching other teachers teach the same (or similar) classes, and in some cases visiting other phases (like primary school) to look at aspects of transition between schools. These informal observations were initiated by the teacher based on the areas they were struggling with or wished to develop further:

> *'J was really good with what I call ploddy students and I would say that this is one of my weaknesses as well so I asked to see her lesson plans. I reorganized my Monday so that we can sit and plan year 11 lessons together because I really*

want to learn from her experience. She has always had, for the past few years, really good year 11 results.' (Diane, interview, p6)

'Working closely with Mr S enabled me to easily understand how to embed important aspects into the lesson without disrupting the flow or taking away activity time from the pupils.' (Q72)

'I informally observed my head of department. He was helpful, giving pupils points at which to start investigating mathematically whilst allowing pupils to think independently. His manner, enthusiasm and encouragement of the class was a big inspiration to me.' (Q3)

'If I just say to my head of department… I am not sure how you are delivering something do you mind if I come in and watch… that kind of thing… so it is a lot more informal and she is relaxed and she is just teaching and forgets that I am there. I don't have to take copious notes or anything. I am just watching and I can pick up on things that weren't necessarily the things I intended to look for going on in there. It is more fluid and more dynamic and I find that it is really powerful.' (Frank, interview, p.4)

In each example, after watching or discussing ideas informally, participants reflected on how they could improve their practice. Similarly to other informal learning activities, the teacher was in control and the learning, again, was contextualised so learning was portable to the teacher's classroom.

Participants also evidenced that learning can happen spontaneously from drop-in informal observations:

> *'I popped into see Mrs W to ask her about something. I stayed for twenty minutes. It was absolutely fascinating to see the way she taught and I think that is the thing that I need to bring in. You have to get out there and see how things are done.'* (Barry, interview, p.7)

Barry's 'getting out there' allowed him to view practice he may not have seen in other circumstances, giving him alternative learning opportunities.

In contrast to informal observations were formal lesson observations. A noteworthy pattern arose in the unstructured data when comparing the two types of observation. Only seven participants chose to describe formal observations when compared to the 16 participants who described informal observations; yet this pattern was reversed in the closed question data.

Participants described how the source of the learning arose from the feedback they received from the person observing their practice:

> '*I always thought they were really strong then someone observed me and said "Well actually superficially they seem quite good but if you analyse them deeply you are asking a lot of closed questions…" that made me stop.. it was quite a shocker because I didn't think it was like that. The more I reflected on it… sometimes you have to be dragged into realisation to snap out of your day dream'* (Frank, interview, p.5)

Frank's shock and then subsequent reflections allowed him to think about different techniques to use in his practice. Other examples from the data were similar, where teacher participants valued the critiques of others in order to confirm or undermine their perceptions of their own practice.

The next group of activities were formal courses and training.

4.3.4 Formal courses and training

Fifty eight percent of all participants described that they learnt from whole staff training whilst 62% of participants chose department training. More experienced staff evidenced both types of training more regularly than inexperienced staff (for example 79% compared to 52% for whole staff training). For two out of three strata, female participants chose formal learning over male participants. Turning to external courses 29 participants described examples such as: examiner training, specialist training courses and conferences. The participants, therefore, sourced formal courses from both external companies and via in-school training to aid their development.

In school training featured in all six interviews. Alice discussed a session on concept maps, whilst Carol, Edward and Frank talked about literacy workshops that had been delivered in such a way that all three thought they were successful. Diane talked specifically about a workshop on group work which she had reflected on and then trialled in her teaching with great success. Evidence collected from course evaluations triangulated the views on specific courses and each evaluation matched the views in the questionnaires.

External courses were elaborated in the data and, as mentioned earlier, were evidenced as a source of learning for participants:

> *'Some parts of the course were a real eye opener and once again sharing experiences with other schools because they have done units we haven't done and vice versa.'* (Frank, interview, p.11)

> *'Mrs C did a training session on creativity. It made me stop and think about how I do things and how I could be more creative.'* (Q73)

Although participants felt they gained knowledge from formal courses, there was counter evidence to suggest that many teachers were disgruntled with their learning:

> *'I sat in the twilight until ten to six. I went back to my office and googled 'differentiation' … it was obviously the same material. If you gone [sic] onto the second or third page you would have found a lot more interesting strategies that would have impacted our teaching. If something doesn't have impact and doesn't change what that person is doing then what is the point of it?'* (Alice, interview, p.14)

Additionally, Barry explained that he had attended a course on controlled assessment, The course had been delivered over a few hours on PowerPoint. He stated that he learnt nothing at all from the trainer and all the main ideas he had learnt had come from the informal discussions he had had with other heads of department. Negative experiences, therefore, affect the quality of learning that takes place with poorly planned activities leading to disengagement. Additionally, there is evidence to suggest that some training

feels "put on" to staff and rather forced whereas when staff see the relevance of an activity to their practice they are more receptive to the learning that takes place. Poor quality, low impact activities are described in the next section.

4.3.5 Activities that are not effective for teacher learning

This final section describes the findings behind the exploration of ineffective learning activities. Participants were given opportunity to discuss or write about activities that did not impact their learning. Table 4.8 shows the link between activity, experience and gender.

Table 4.8 Activities that do not impact teacher learning

Key activities described	Number of less experienced teachers			Number of middle experienced teachers			Number of most experienced teachers			Total number of participants that select activity (n=55)	Total number of interview participants that select activity (n=6)
	0-6 years			7-14 years			15+ years				
	Male	Female	Total	Male	Female	Total	Male	Female	Total		
Total in sample	**8**	**13**	**21**	**11**	**13**	**24**	**7**	**3**	**10**	**55**	**6**
Formal training and CPD	5	10	**15**	7	8	**15**	5	3	**8**	38	6
%	63%	77%	**71 %**	64%	62%	**63%**	71%	100%	**80%**	69%	100%
Monitoring of practice	1	1	**2**		1	**1**		0	**0**	3	0
%	13%	8%	**10 %**	0%	8%	**4%**	0%	0%	**0%**	5%	0%
Co-coaching	0	1	**1**	0	1	**1**	0	1	**1**	3	0
%	0%	8%	**5%**	0%	8%	**4%**	0%	33%	**10%**	5%	0%
Department meetings	**0**	1	**1**	**0**	1	**1**	0	0	**0**	2	1
%	**0%**	8%	**5%**	**0%**	8%	**4%**	0%	0%	**0%**	4%	17%
Formal lesson observations	0	0	**0**	**0**	1	**1**	1	0	**1**	2	2
%	0%	0%	**0%**	**0%**	8%	**4%**	14%	0%	**10%**	4%	33%

Criticism of formal training dominated the table. Staff with most experience were the most critical, followed by the lowest and then middle strata of experience. The five key activities that were highlighted as problematic for learning were:

1. Formal courses and training (both in and out of school) (38 questionnaire participants / six interviewees)

2. Monitoring of practice (3 questionnaire participants only): *'Stressful and made me feel incompetent'* Q34

3. Co-coaching (3 questionnaire participants only): *'not improving my practice at all'* Q16

4. Department meetings (two questionnaire participants / one interviewee): *'a place to rant rather than find solutions'* Q2

5. Formal observations (one questionnaire participant / two interviewees) *'feedback is opinion and you can't change it'* Q35.

The criticism of formal training included: poor differentiation (to the ability of the teacher), 'too much talking' (Q21), repetitive, poor delivery, not specific or related to subjects, poorly structured, too late in the day, too tired, purpose not clear and little impact on practice post-course. Participants were frustrated with formal courses and the language they chose to use demonstrated that.

In addition to formal courses, participants critiqued co-coaching. The premise of coaching has not been discussed in this thesis, however, in this context co-coaching was set up by senior teachers for staff to propagate informal learning activities. The activities never happened and so a form of contrived collegiality was set up (Hargreaves, 1994)

where the content and context of the meetings were monitored. In addition, people were "matched up" if they could not find a partner:

> *'Myself and my partner had such different styles that we had little to offer each other. My approaches would not have worked for him and vice versa.'* (Q1)

> *'Too much else going on at the time, hard to find another member of staff that matched my subjects, experience and vision'* (Q16).

Across all five activities there were common themes in why participants felt their learning was not effective. Summarising the key evidence from participants:

1. Activities are "top down", imposed on staff at specific times and not differentiated:

> *'They are held at the end of the day when everyone is tired and are not subject specific.'* (Q1)

2. They promote a false or contrived collegiality.

3. Activities are de-contextualised and not easily portable to the classroom:

> *'I am told about a method and can't <u>see</u> how it is put in place within the classroom.'* (Q31)

'If I can't see the clear impact with the kids then I'm less interested. Especially if I feel that doing this task [the learning activity] would take away from the time I've got with the students after school.' (Q7)

4. They do not take into account prior learning or ability:

'I have, at different times, had to attend whole school INSET sessions that were not at an appropriate level as my skills were greater than that at the training session delivery level. This can be frustrating and a waste of time, especially when other tasks need completion.' (Q3)

'It is repetitive over time, not relevant to me or my area.' (Q32)

5. They are perceived to be threatening or judgemental on teachers' practice.

Giving participants opportunity to be critical about learning activities set the ground for further exploration about effective learning activities. Time constraints on the questionnaire meant the interview was an appropriate method to explore participants' ideal learning opportunities, particularly as their opinions could be used to improve professional learning at KHS. Each interviewee was asked about their ideal learning activity if they were to plan for their own needs and desires. The evidence suggested that although each participant viewed learning differently, there were common themes between each interview. Illustrating with a selection of examples:

'It would need to be something that engaged me… I would want a practitioner there, not someone who is not in the classroom and can no longer hack it. If

*there was someone there who was saying to me "We used this in a school and I have got all my pupils A and A*s" I am listening. I would want to see real life examples. I would want, say, ten strategies that I could use. I would want to come back into the classroom the next day and put [the learning] into practice absolutely the next day. Give me the hard evidence.'* (Alice, interview, p.11)

'I would like it based on theory. I would really like to know what current practitioners are doing. I want to know proof it works. I am always critical why we are doing something. Is it because 100 schools have tried it and they got outstanding results or is this because Michael Gove or whoever it is has said you should try this?' (Diane, interview, p.7)

'Something differentiated without a doubt. You have got these professional people, they know how their department works. I think you have to allow the flexibility for them to pick and choose. Let them view them all but let them take the things that are powerful for them because if you try and pigeon hole everybody, if you try and do it on mass as a whole school thing… I think that is not necessarily that strong.' (Frank, interview, p.13)

According to the sample, activities have to be engaging. The content of the activities have to show they work; namely, they help participants improve their practice in the classroom. Similarly to how teachers set up their informal collaboration, teachers identify other members of staff where a strategy or class is "working" and then set about finding out why and how to implement the practice themselves. Activities have to be differentiated, or at least those that deliver training have to be aware of the prior knowledge of those that attend. Teachers want to know if the activity and learning is

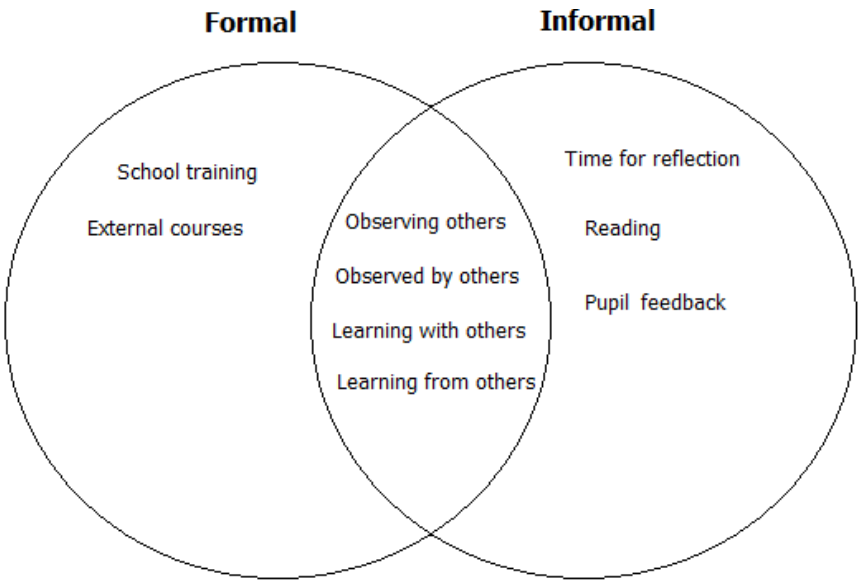
portable to the classroom; will the practice work for them in their context? This is particularly pertinent for more experienced teachers as evidenced by Alice and Barry who have experienced a wide variety of change. Finally, the teachers have illustrated that they are time poor and want to make sure that if their time is dedicated to learning then the activity will work for them.

This section has illustrated the findings concerning the activities that impact teachers' learning. The next section will discuss the key activities and their link to theory.

4.3.6 Discussion of types of activity

Section 4.3 has explored the various types of activities that teachers in this study felt affected their learning. The interviews offered snapshots into each teacher's learning activity. In addition, the unstructured nature of part of the questionnaire allowed participants to describe and explain key learning activities. Each story or activity can be categorised under formal or informal learning (Eraut, 2004, 2007; Hodkinson & Hodkinson; 2003, 2005). This discussion will consider both types of learning activity.

Figure 4.6 key learning activities from data



The labels “formal” and “informal” are not straightforward and Figure 4.6 shows an area of overlap between key learning activities. In learning from others, the teacher (or other) becomes the source of the knowledge whereas learning with others the group learning together constructs meaning together. In addition, learning with others could be formal such as department training or a network meeting where teachers discuss their subjects. Informally there could be a group of teachers working together discussing teaching a difficult child or pedagogical problem. Turning to learning from others, a teacher could attend a formal line management meeting and new learning could occur from the meeting. It is important to recognise that although the classification of an activity as formal or informal is complex, the terminology is useful to categorise activities.

Informal learning, where the learning is led by the teacher and often (but not always) unplanned (Marsick et al., 2006; Lohman, 2007), features prominently in the evidence across teachers of all experiences. In addition, the link between informal collaborative learning impacting positively on teacher learning has a strong literature base (Hodkinson & Hodkinson (2003, 2005); Lohman (2006); Eraut (2007); Wilson & Demetriou (2007); Meirink et al. (2010); Opfer & Pedder (2011); Rytivaara & Kershner (2012)). Informally observing others is also evidenced in the literature (Coe et al., 2014) and the informal nature of the observations overlaps with collaborative practices. Data clearly shows how the nature of the informal observations enables rich learning opportunities; they are arranged by the teacher, they are non-threatening and they can yield more learning experiences than planned. Nuances include the evidence that less experienced teachers seek those that are more experienced to help them develop. This could explain, for example, why more less experienced teachers evidence informal observations than middle and most experienced teachers. Being experienced does not preclude from

learning from less experienced staff as the most experienced staff can learn from mentoring, line managing and visiting teachers in different schools and contexts.

Informal learning does not just happen through informal observations and is evidenced through meetings, corridor conversations and discussions about practice. The evidence showed how teachers actively sought out others to informally learn from. In each example the teacher has noticed some problem or issue in their practice and found others to work with. In schools, the community of practice (Lave and Wenger, 1991) is not well defined, as schools are hosts to different types of expert. Some teachers may excel at behaviour management, some pastoral issues, and some are subject experts. This leads to less experienced (or more experienced with less self-efficacy (Bandura, 1977)) practitioners using the school "grapevine" to look for "experts". Teachers have to be able to both identify their own weak areas and then subsequently find other practitioners to help them. Searching for the right person to learn from is key; for example, the person who is competent at behaviour management may not be the person who has the most experience in subject knowledge. Whoever that person is and whatever experience they hold, their routinized, intuitive decisions (Eraut, 2004) are the source of learning for others. These examples identify key aspects of andragogy (Knowles, 2005) and deliberative learning (Eraut, 2000). This form of collaboration (Hargreaves, 1994) promotes experiential learning (Dewey, 1938) that empowers some teachers to reflect on their practice (Schön, 1983).

The day-to-day practice of teaching also helps teachers learn. For individuals, informal learning through classroom practice (Kwakman, 2003) is said to be constant, implicit and reactive (Eraut 2004, 2007). I argue that the informal activities have an important role to play in the learning of teachers. I would suggest that informal activities are only

part of the influences on improving teacher practice as informal activities overlap with formal (figure 4.6). The key to improvement in practice would come from the correct identification of areas of development. The issue is that in some environments one person may not want others to pick up the key problems with their practice for fear of judgement. The presence of a critical friend, however, helps a teacher be more accurate with their reflections (Convery, 2001).

Reflective activities are featured in the data as both self and peer reflection. Participants evidenced reflection-on-action to a greater extent when compared to reflection-in-action (Schön, 1983). The possible reason for this is that it is an instantaneous, sometimes tacit process, and is difficult to recall much later on (Day, 1999). The reactive and implicit nature of reflection-in-action would mean that few teachers would be able to express explicit examples. Explicit examples tended to be linked to different formal learning activities.

Formal learning activities were prevalent in the both the questionnaires and the interviews. In contrast to informal activities, formal CPD courses were featured less often within the data but were favoured by more experienced teachers. This finding chimed with section 4.1 whereby experienced teachers saw their learning as acquisition. If acquisition models of learning are favoured then formal activities tend to align with acquiring explicit knowledge.

There were participants who felt formal CPD was effective for learning (see figure 4.5 and table 4.7) but the key criticisms from the teachers match the criticisms found in the literature including:

1. The activities were too short, not intense enough or revisited enough times to embed into practice (see also Smylie, 1995; Desimone, 2009).

2. The activities were not differentiated (as discussed by Lieberman and Pointer-Mace, 2008; Hoekstra and Korthagen, 2011), run at the end of the day when teachers were tired, and too far removed from the good quality pedagogy that the teachers used confirming the findings of Day (1999).

3. Experienced teachers in particular voiced clear frustration in how the formal activities were not relevant to their subject, or at least the activity's relevance had not be explained to the teachers (see Putnam and Borko, 2000; Korthagen, 2010; Rytivaara and Kershner, 2012).

The shortcomings of formal courses presented themselves regardless of the experience of the teacher. The data suggests that it is not that the teachers do not want to learn (in fact, section 4.1 highlighted that fourteen teachers felt learning is about improvement). The core concern is that teacher participants get frustrated when they are time poor and the learning activities are not felt to have impact on their practice.

The experiences of the staff in the case study school match key themes in the literature on poor performing CPD sessions which in turn links to the key features of andragogy as elaborated by Knowles (2005).

Table 4.9 Comparing andragogy with key findings

Feature of andragogy	**Comment on key findings**
The need to know	Teachers need to understand why the learning will impact their practice.
Self-concept	Teacher's learning, despite being part of a community, is about self.
Role of experience	Every teacher has a selection of prior experience that learning activities must acknowledge and build on.
Readiness to learn	Most teachers want to learn to improve their roles and performance.
Orientation to learning	Teacher learning is a blend of problem orientation rather than content orientation.

In short, if the relevance of a training session is not explained, a teacher's prior experience not taken into consideration and teachers are not ready to learn then this will impact on the success of a learning activity. Diane, for example, exemplified features of andragogy in her interview when she was discussing training sessions on using registers. She did not understand why she had to learn about registers (the need to know) when she felt she was already competent (role of experience). She took part in the learning because she was directed to even though she would not have chosen the activity herself (self-concept).

Formal training sessions are not the only learning activities that could be seen to be formal. The other themes from the data are formal lesson observations. As mentioned earlier, more experienced teachers tend to highlight formal observations over informal observations when considering learning activities.

Shortland's (2010) work emphasises that there are two main considerations when judging whether observations can impact a teachers learning:

1. Who is the person doing the observation?

2. How is the feedback given?

These considerations feature in the data; examples are:

> *'Senior member of staff observed me and gave me excellent feedback that helped with my development.'* (Q74)

> *'I was observed by Mrs F with a year nine class who were difficult in terms of behaviour. She gave me feedback verbally and in a written format. This was important for my development because she gave me specific strategies and tips such as giving the pupils take up time, praising those on task etc. This was particularly helpful as the next lesson I was able to use the strategies and reflect on the impact they made.'* (Q43)

Despite these examples, the criticism for formal observations was around the feedback. Teachers feel the observations are subjective or hierarchical:

> *'Senior staff observation feedback is less than useful when you feel that they tell you their opinion and that's final. Can't justify or give your intention*.' (Q35)

> *'[observations] are somewhat intrusive. Whilst I understand the merit in these endeavours it can create an atmosphere of distrust or fear.'* (Q42)

Participant 42 highlighted the distrust of observations when senior teachers are evaluating their performance. Formal observations can have greater impact on teacher learning if the following points are adhered to: senior staff should 'downplay their evaluative role as evaluation can be threatening and disempowering' (as per Shortland, 2010, p.296); additionally, linked to participant 35, if feedback given is criterion linked then learning is more powerful if the observee has time to reflect on the feedback, weigh up its significance 'rather than accept it at face value' (ibid.).

Three teachers are mentors in the school to trainee or newly qualified teachers. They talk about how formally watching other members of staff have helped their own development. In one example, the participant discusses using what they have seen with trainee teachers in their own practice, for example, new methods of assessing pupils' progress. New techniques from training schools or universities are filtering into schools through novice teachers. Rather than an apprentice/master relationship (Lave and Wenger, 1991) the learning relationship, again, is symbiotic whereby teachers of contrasting experience are learning from each other. The complexities of mentoring are similar to comparing teachers of less and more experience.

Aside from using members of staff who are perceived as "good" for learning, promoting other good quality learning opportunities is key to improving teaching (Hodkinson & Hodkinson, 2005). Overall, there are three key aspects that arise from the data:

1. Informal activities can be started by the teacher deliberately (see Eraut, 2004) or they happen within more formal learning activities.

2. If informal activities are set up by the teacher this creates a more positive stance by the teacher towards the learning. In contrast, in some types of formal learning activities (when the teacher is not always in charge of the purpose of the learning) teachers value these types of activities less; with regards to their learning. There is, however, no data to suggest they have less impact over time.

3. Formal learning opportunities also impact teachers learning positively. Participants discussed several examples of formal learning activities that have helped them.

The chapter now concludes by considering each research question in turn and summarising the findings from the study.

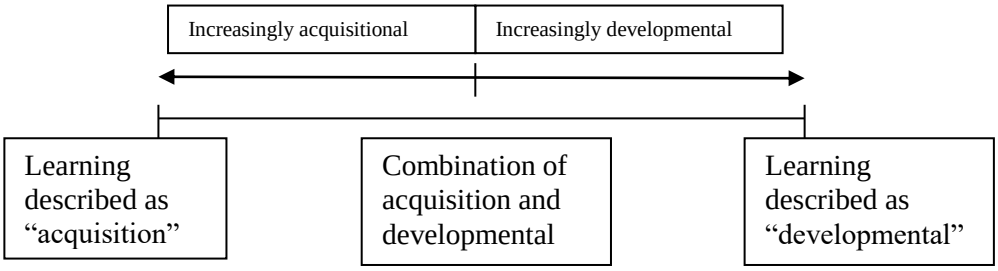
4.4 Conclusion

4.4.1 How do teachers conceptualise and describe their own learning?

RQ1a. How do practising secondary school teachers conceptualise the terms 'professional learning' and 'professional development'?
RQ1b. How do practising secondary school teachers describe their own learning and development?

The evidence from this research suggests that secondary school teachers see their learning on a continuum between acquisitional models and 'developmental' models.

Figure 4.7 Teachers' main perceptions of their learning



Teachers in this study viewed their learning from two dominant perspectives of acquisition and developmental. Rather than two discrete categories, the models can be viewed on a continuum, represented by figure 4.7. More experienced teachers tended to choose acquisitional models of teacher learning whilst less experienced teachers viewed their learning as developmental. Developmental learning has its theoretical roots in both participation and construction. The use of a continuum illustrates the potential for combining teacher perspectives on learning whereby teachers in the middle would view learning as acquiring new knowledge which then is re-constructed (Hager, 2008) alongside prior knowledge in order to develop (or which then develops) their practice. There were few differences in the data when comparing gender or whether the participant was regarded as having a critical or engaged stance to learning.

Teachers view learning as change. Change could occur in cognition, in behaviour or in their own self-belief or competence. Some teacher participants feel learning is a process whereby the outcome is being a better teacher whilst some see that learning offers them a different perspective on their teaching. In the data, teachers described with some clarity how important they felt learning was to improving their practice.

In this case study, in addition to the views of acquisitional and 'developmental' learning, the teachers expressed a perception of forced or imposed learning. The participants evidence the dominance of the school shaping *what* should be learnt and then subsequently shaping the learning that takes place. Viewing learning as acquisition, namely as a deficit in teachers (Hager, 2004), the school prioritises activities that would promote ideas it feels are important. As Engeström suggests, this could be a source of frustration or innovation whereby old ideas collide with new as institutions themselves experience change (2001, p136). Examples from this research include whole school literacy, use of data in the classroom and using group work. This leads to a teacher undertaking learning which the teacher may not individually choose to do but which is originally instigated to promote school development.

In some instances, the perceived forced nature of the learning is counterproductive to school development. Diane, comparing teachers to doctors, felt de-professionalised when her learning was directed by the school. If teachers feel their learning is forced and they do not see the value of learning then the commitment to the learning is contrived (Hargreaves, 1994). Interview data echoed the real frustration in learning a practice that did not improve teaching quality and yet no participant felt able to talk to the senior teachers about it. If, as the interviews indicate, teachers are frustrated, then learning may not be as effective. If learning is not effective then change may not happen. Motivation to learn is key to good quality professional development (Knowles, 2005).

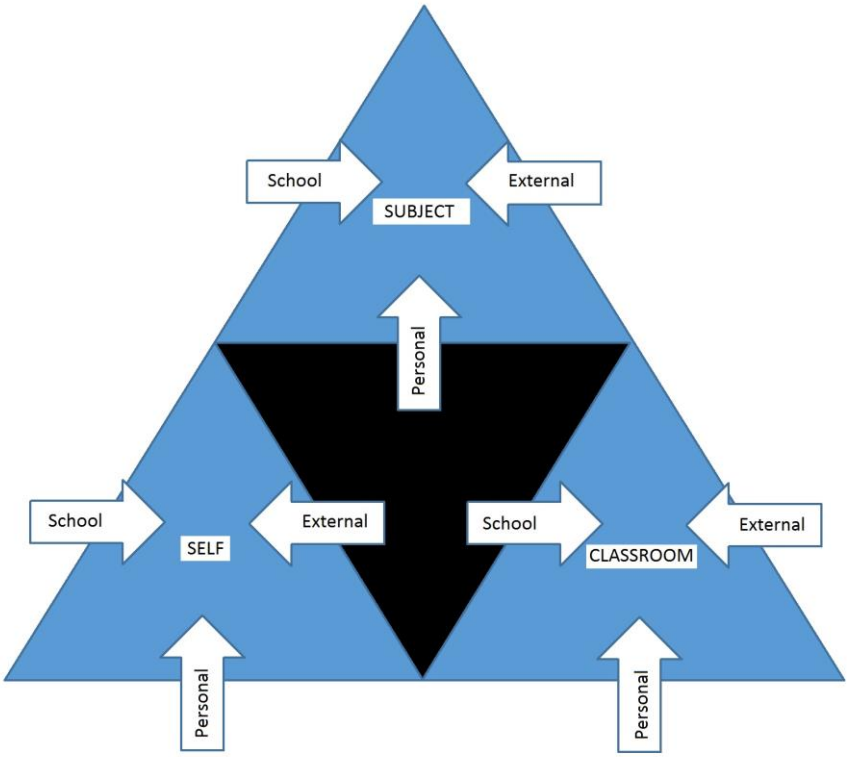
4.4.2 What do teachers think they learn and develop?

RQ2. What do practising secondary school teachers think they learn and develop?

Section 4.2 summarised the three categories of teachers' knowledge at KHS. Since learning to teach, experienced teachers have encountered many external variables, for example: changes to curriculum, political pressure from the government and changing

behaviour management techniques. Knowledge that was originally fit for purpose has changed and so more experienced teachers are just as likely to be learning different techniques as less experienced teachers. This includes core knowledge, for example pedagogical and subject knowledge and behaviour techniques. Using the key points from the discussion a typology of teachers' knowledge was designed for this case:

Figure 4.8 Redesigned typology categorising teachers' professional knowledge.



The typology consists of three main categories of knowledge discussed earlier: subject, classroom and self. The subject knowledge domain contains the specific and pedagogical subject knowledge (Shulman, 1987) needed to teach. This domain was the most prominent in the research and so forms the "apex" of the triangle.

The classroom knowledge domain encompasses the knowledge needed for general teaching and classroom management plus specific features such as general assessment techniques, use of data in the classroom, and behaviour management. This was evidenced by the data presented in section 4.2.2 whereby participants referred to general

teaching skills like behaviour management, general pedagogical practices, use of pupil data, and written feedback through ‘green pens’.
The self-domain is designed to feature knowledge specific to a person and/or their role. Covering the implicit skills for teaching, teacher participants perceived the self-domain dominated as a form of knowledge that can be learned.

Similarly to Banks et al. (1999), both the self and classroom domain support the apex of the triangle. For the secondary school teachers at KHS the subject domain was one in which many experienced and less experienced staff still felt they learnt and developed.

The diagram also recognises that a practising teacher’s knowledge base is subject to external influences and changes. The data showed that teachers’ knowledge is influenced by other factors. The arrows are labelled and attempt to demonstrate the “push” into teachers’ knowledge from three areas: personal, school and external:

1. Personal: this arrow shows the influence of prior knowledge on a teacher’s knowledge base. Covering, to some extent, personal knowledge constructs (Banks et al. 1999) this arrow demonstrates what the teachers bring to their classroom. For a science teacher it could be their specialist subject knowledge (e.g. a generic science teacher may have in-depth chemical knowledge from a chemistry degree). The personal arrow also indicates a teacher’s interest. Carol, for example, has an interest in metacognition and this shaped how she approaches her knowledge.

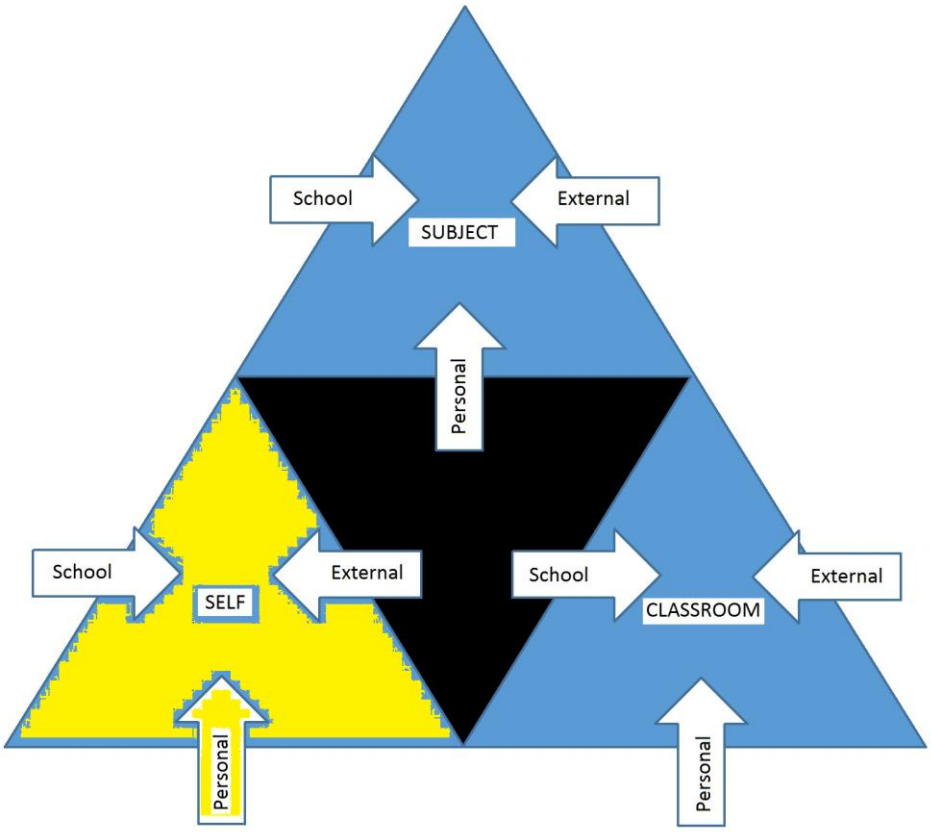
2. School: this arrow represents the influence of the school. Each school may have a different approach to aspects of how knowledge is applied. For example,

different assessment systems and different drives on aspects of pedagogy (Alice evidenced a push on pupil-centric learning; Edward, the four-part lesson; and Frank, literacy)

3. External: this arrow represents the influence of external organisations such as Ofsted, the government, and examination boards. If an examination board was to change their specifications of qualifications and hence their curricula this would influence teachers' knowledge in different ways.

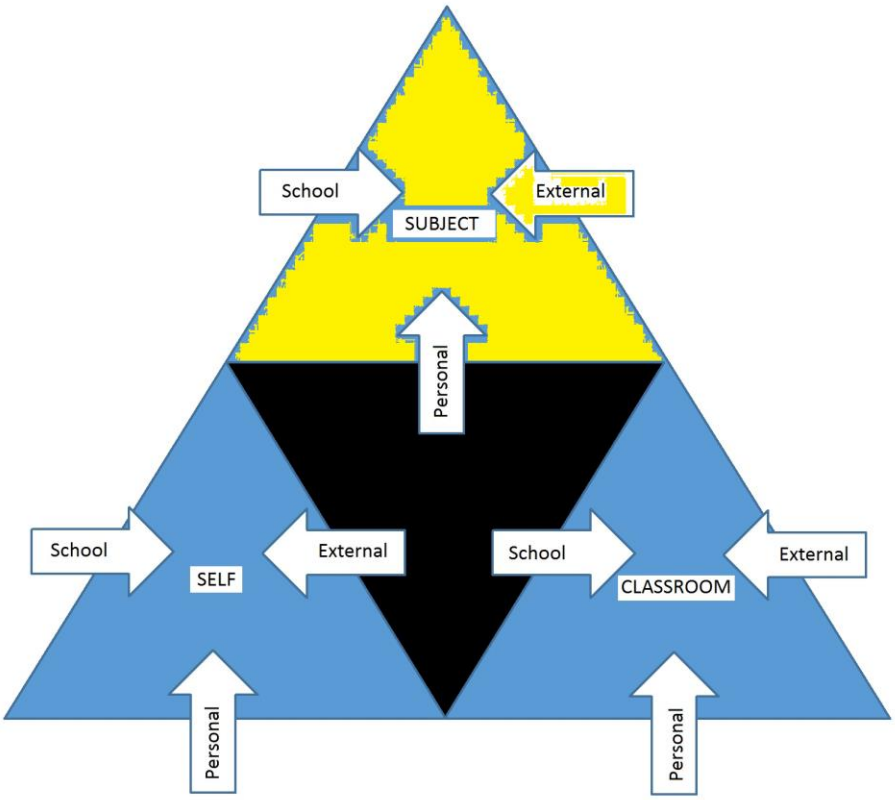
The interviews provide evidence that this data fits the typology. Using Carol as an example, she wanted to know how to manage people more effectively. She learnt how to mediate and so this was a particular skill that was "pushed" from herself as a strategy to help her learn (Carol, interview, p.7). This would be included in the "Self" triangle from the push of the "personal" arrow (p184):

Figure 4.9 Section relevant to Carol



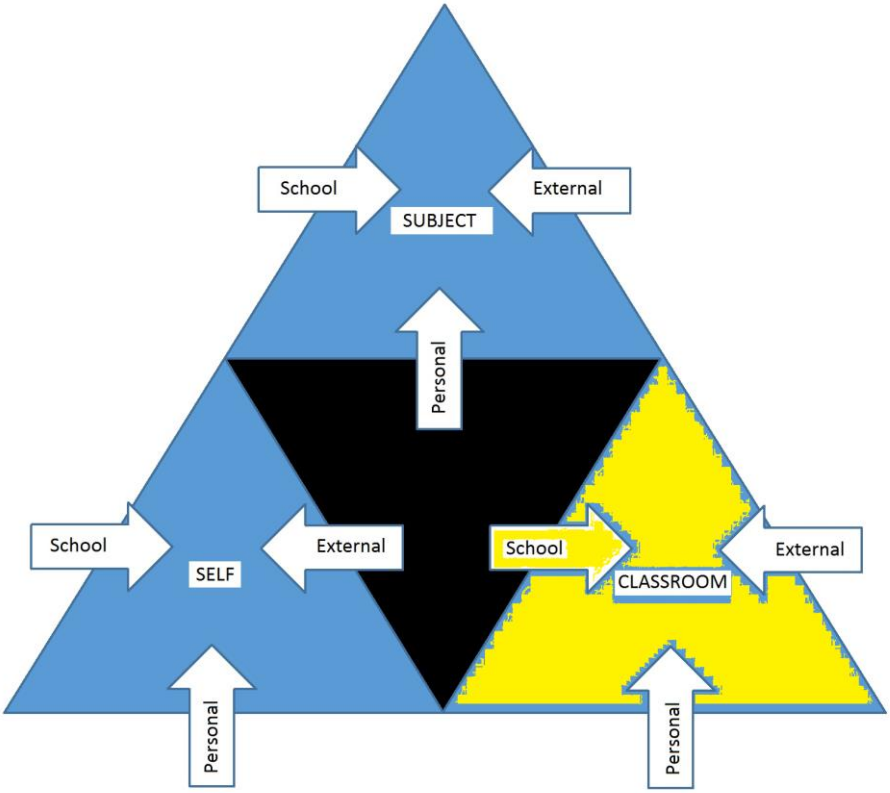
In another example, Barry, as an experienced member of staff, had prior curriculum knowledge. Despite this, he had to go on an external course to learn about a new set of controlled assessment. This would be in the “subject” triangle with the push from “external” influences.

Figure 4.10 Section relevant to Barry:



Turning to a final example, Alice described the use of "green pens" in the classroom. The school encouraged teachers to allow students to respond to marking and written feedback using green pen in order to show progress. Despite being an experienced teacher, Alice had never used this technique before and had to work out how to use the pens effectively in her practice. The technique became part of her knowledge base, influenced by the decisions of the school she practiced in. Figure 4.11 (on p186) illustrates:

Figure 4.11 Section relevant to Alice



The typology is a different way of looking at teacher knowledge. Shulman's model was criticised for being objectivist and not coping with the changing nature of teachers' knowledge. The arrows in my revised model attempt to show the changing nature of teachers' knowledge as they represent the push of new learning into the knowledge base. The data showed, through interview and questionnaire responses, that teacher knowledge is in a state of flux with certain techniques changing with new evidence, influences from the school community and new perspectives on "what works" in making good teaching.

Borko and Putnam (1995), Banks et al. (1999), and Cochran-Smith and Lytle (1999) showed the importance of teachers' prior knowledge in designing a model of teacher knowledge. Their models also recognise the impact of the school and other external factors in determining what forms teachers' knowledge. The model proposed here goes

one step further and evidences the dominance of some parts of teachers' knowledge to others.

4.4.3 What activities impact teachers' learning?

RQ3. What activities impact secondary school teachers' learning and development?

In summary, there are many activities that impact a teacher's learning. The activities depend on many variables including: the teachers' experience, the school's needs, and the type of learning that has to occur.

As shown in the interviews, a teacher's drive for self-improvement will lead them to adopt informal, often collaborative activities such as observing others teach. The "other" has been purposely selected by the teacher for exemplar practice in one knowledge or skill domain. Experienced teachers are just as likely to look for help from others as less experienced staff. Gender plays little difference between activities although females of middle experience tend to describe more learning activities than males of the same experience. Linked tightly to informal observations are other types of activity like reading journals and texts to find new or better practices, working with other teachers to solve problems in the classroom, and encouraging and coaching each other to get better. These learning activities all involve developmental and 're-construction' (Hager, 2008) principles in that learning is remodelled and reshaped as learners navigate problems, deficits and dilemmas in their practice.

Contrasting informal learning activities are those that are formal. Formal activities could be led by the teacher (for example, choosing to attend an external course) or directed by

the school (like “INSET” or “twilights”). Despite some criticism, formal activities can impact the learning of teachers. New codified knowledge that needs to be acquired can be delivered in a formal, structured way. Formal lesson observations offer experienced teachers an insight into the effectiveness of their practice; when less experienced teachers use more competent practitioners for learning.

The formal and informal activities, however, are not a simple dichotomy as many learning activities are evidenced by the participants of being a blend of formal and informal processes. Mentoring, for example, is a formal process for mentees but yet offers learning opportunities for both the mentee and mentor in a form of learning symbiosis.

At the beginning of the research I felt that much of the formal learning at KHS did not impact the learning and development of teachers. However, I was consciously aware of my own preconceptions and attempted to bracket these in order to prevent biased inferences. The research showed that, in contrast to my own opinions, all types of learning activity had relevance to teacher learning. Participants indicated they wanted a varied diet of learning opportunities, whereby their context and experience play a factor in whether they attend a course or not. Participant’s criticisms of formal learning activities may be unfounded. The study may have shown that participants do not like certain features of formal learning but judging the impact on learning over time is more challenging. Formal activities may not necessarily be “bad” and informal activities “good”. For participants, learning over time was not always explicit immediately as a participant may not be aware of the impact of the training they attended until some time later.

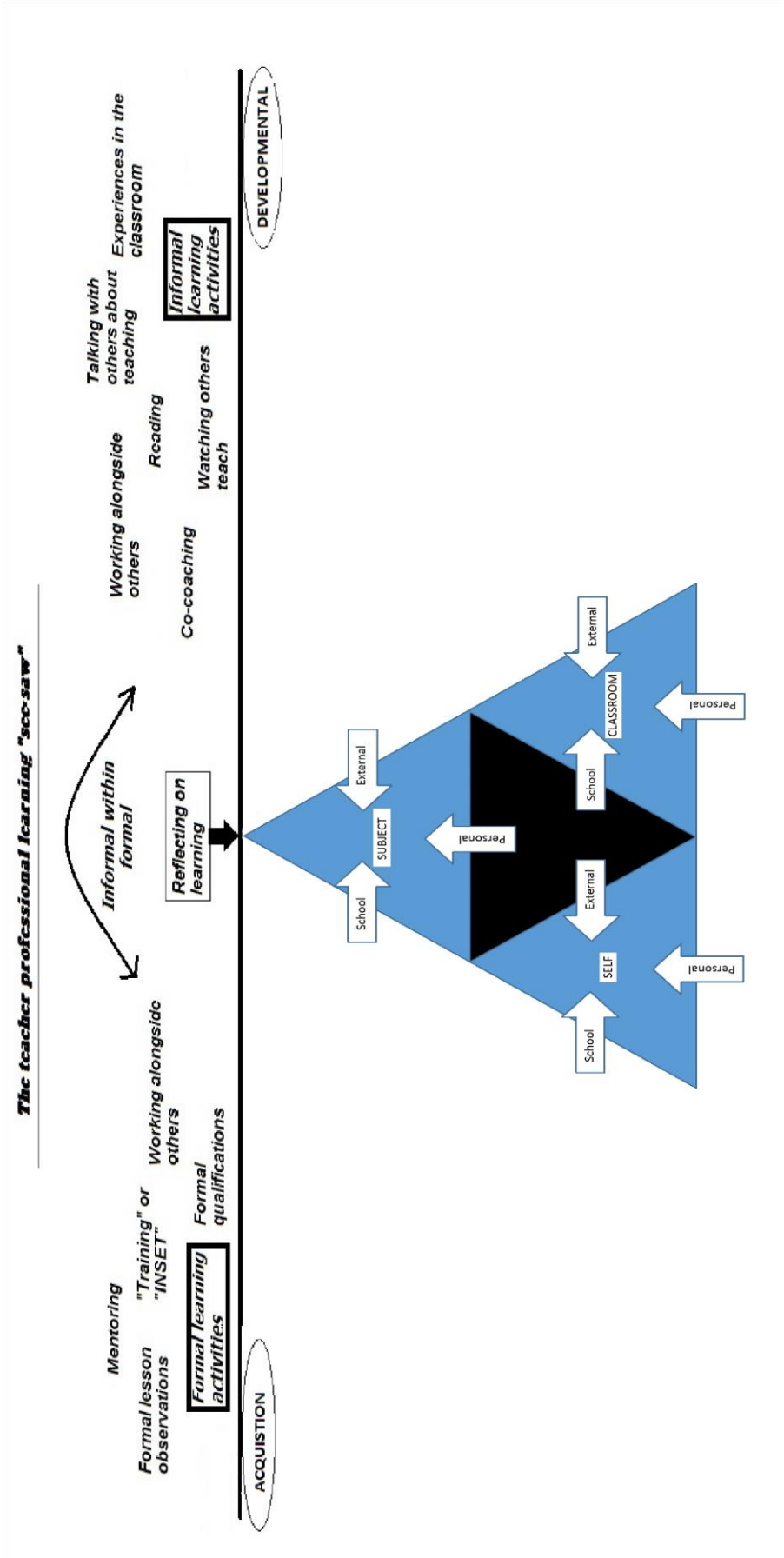
4.4.4 Overarching conclusion: A new perspective on teacher learning

This thesis set out to generate a better understanding of teacher learning from practising teachers' perspectives at KHS. Drawing together the three themes of this research is complex as each section and research question is interrelated. Understanding how teachers perceive their learning is linked to the types of activities that teachers use to promote their knowledge growth. To grow knowledge, it is necessary to have an understanding of what teachers know or need to know in the first place!

The concluding section in 4.1 identified that two key views of learning by teachers in this study are the perspectives of learning as acquisition and learning as 'developmental'. Teachers viewed their learning on a continuum and in some cases had more than one perspective on their learning. Section 4.2 investigated what secondary school teachers thought they learned and developed. Key areas from the literature such as pedagogical subject knowledge (Shulman, 1987) and school knowledge (Banks et. al, 1999) where identified with a third area about *self*-knowledge; knowledge of one's own competences, values, traits and experience for a particular role. The third section, 4.3, viewed the variety of activities that teachers perceived affected their learning. Linking in with knowledge, activities were selected by teachers to help them develop key aspects of their practice. In addition, activities instigated by the teacher, or where the teacher saw the purpose of the learning, were discussed more favourably compared to others which were viewed as forced.

Taking all the key features from each research question I have developed a diagram that attempts to relate the three parts of this research together and offer a different perspective on teacher learning. Figure 4.12 demonstrates (on p190):

Figure 4.12 The teacher professional learning ‘see-saw’



The model originated from my thinking, from my interpretation of the key themes from the literature and from the data.

The see-saw shape is intended to model many aspects of teacher learning. Firstly, the "board" across the triangle pivot shows that formal/informal activities and acquisition/developmental perspectives are not dichotomies but part of a continuum. Secondly, the see-saw is balanced. The reason for this is to show that teacher learning depends on both formal and informal learning activities and both acquisitional and developmental perspectives. Acquisitional perspectives align with formal learning and propositional knowledge. Developmental perspectives align with both participation and re-construction metaphors of learning, informal learning activities and procedural knowledge. The use of the continuum emphasises that combinations of perspectives and activities are also valid; informal activities could produce acquired, propositional knowledge for example. The typology is designed to bring together all the perspectives of teacher learning whilst not valuing or proposing one perspective over another. The use of a see-saw underpins the importance of all perspectives on learning. If you remove one from the see-saw then it will become unbalanced. If a teacher takes part in solely formal or informal activities then their learning will not be as rich as if their learning comes from a variety of experiences.

The importance of reflection is also made explicit through the model, particularly the value of reflection in developing practice. It is, however, outside of the scope of this thesis to go into detail but reflection is an important aspect of teacher's professional leanring. As Convery (2001) argues, reflection should not just be individual as a critical friend is sometimes needed to force ourselves to reflect accurately (Shortland, 2010).

Formal observations, for example, do force teachers to reflect and consider how to improve their practice albeit from another person's point of view. From the data there are examples that justify how formal observations purport to impact learning, including the acquisitional and cognitive nature of the activity:

> *'A formal observation from the Head Teacher gave me specific areas to develop'* (Q74)
>
> *'Observation gave me specific feedback to deal with'* (Q43).

Returning to the triangle pivot, this section represents figure 4.8, a teacher's knowledge base, elaborated earlier. The arrows represent the influence of external changes on teachers' knowledge and skills and therefore encompasses aspects of the "forced" learning as mentioned by participants in section 4.1.

Thirdly, the balance of the see saw demonstrates, like the key themes in 4.1, that both acquisitional and developmental perspectives on teacher learning are valid. A consideration of both acquisitional and developmental learning is ideal when viewing the learning of teachers (Eraut, 2004; Illeris, 2004; Sfard, 1998). In addition, both acquisition and developmental learning can be combined with the different types of knowledge within the knowledge base triangle pivot. Acquisitional learning, for example, pairs with certain activities (for example formal courses, feedback from formal observations) which in turn leads to explicit codified knowledge (for example new codes of practice, new GCSE syllabi). Examples from the interviews and questionnaire include Barry's attendance at a conference to learn about new assessment procedures, Alice's course to learn how to timetable school classes and Edward's examination board and standardisation meeting. Within the questionnaire there are participants who learn

specific behaviour management techniques, learn to be examiners and some who complete MA courses outside of the school. Some perspectives highlight an overlap with developmental perspectives on learning.

Developmental learning occurs through informal activities (for example talks with colleagues, classroom experience) and builds implicit, tacit or practical knowledge (for example, what behaviour strategies "work" with a particular class or pupil). Although this study suggests that different activities associate with different perspectives of learning there is an overlap between activities and perspectives of learning. The overlap is shown by the double-headed arrow which indicates how some formal activities can have informal aspects within them. Barry, for example, described on his curriculum course that the conversations he had with other heads of department helped his learning and development more than the course itself. Carol described how, during her masters course, she found herself learning from the informal discussions that took place outside of the formal taught sessions. Questionnaire responses showed that those teachers who were mentors of new staff elaborated how, through formally observing their mentees, informal learning would happen that would be unplanned and serendipitous.

The model is not intended to over simplify the complexity of teacher learning. I acknowledge that teacher knowledge is not static but fluid and changing from three different sources (personal influences, the school we work in and external influences). I also acknowledge that the "board" of the see-saw is a continuum between acquisitional learning and developmental learning. As illustrated in section 4.1.2, the term 'developmental' originated from the data, however, it has strong links with re-construction (Hager, 2008) and participation metaphors of learning (Lave & Wenger,

1991; Sfard, 1998; Eraut. 2004; Hager, 2004a; Hodkinson & Hodkinson, 2003, 2005; Opfer & Pedder, 2011).

The activities on the see-saw can lead to different experiences. For example, all six interview participants talked about reflecting on classroom practice both in and out of the lesson/s. Some experiences in the classroom are implicit (Eraut, 2004) or form reflections-in-action (Schön, 1983, 1987). These bodies of experience build up, forming tacit and practical knowledge (Dewey, 1938; Nonaka and Takeuchi, 1995). Other experiences arise from watching others work or teach, talking through problems with peers or those with more experience, reading books and literature about teaching, and to some extent co-coaching. Questionnaires showed how participants actively sought out others to watch:

> '*I work with more experienced members of staff to help [me] learn'* (Q72)

> '*Informal learning is the most useful as I can seek others out to help'* (Q6).

Each activity a teacher engages in has an important role in impacting a teacher's knowledge base and subsequently their learning and understanding of the teaching world around them. In addition, collaboration in learning is key. Too much collaboration, (or contrived collaboration) would lead to little productive learning (Hargreaves, 1994), too little and learning feels "forced" and decontextualized. Getting the balance right is key to good quality teacher learning and development. Chapter five summarises this research and discusses the implications of these findings for other professionals.

CHAPTER 5 TEACHER LEARNING IN PRACTICE

Chapter 4 drew together key aspects of this research to synthesise a new model for secondary school teacher learning. This chapter elaborates how the research both aligns and differs from previous research. Additionally, there is a discussion on how the findings have affected my own practice and how it can be relevant to other practitioners and professionals. The chapter finishes by discussing dissemination, describing further questions, critical reflections on this study and my final thoughts.

5.1 How does this research contribute to knowledge about teacher learning?

There are clear areas where this research has contributed to understanding about teacher learning. Furthermore, there are areas in which this study both supports and counters the literature on teacher and adult learning.

This research showed that, in addition to regarding their learning as acquisitional and through participation (Hodkinson & Hodkinson, 2005; Hager, 2004a; Sfard, 1998), teachers also view their learning as 'developmental', that some learning is forced learning, and that learning can be described as greater teacher effectiveness. Whilst the study supports the views of acquisitional and participational learning, other perspectives of teacher learning are also identified. 'Developmental' learning, for example, is a perspective originating from teacher participants that has roots, theoretically, in Hager's participation and re-construction metaphors (Hager, 2008). Through this research, participants have brought the metaphors into context by describing how their learning is defined through their development.

This research also offers new perspectives on both learning as acquisition and learning through participation. Through analysis of the data, nuances in perspective emerged as a result of viewing learning through the lens of teacher experience. Teachers with greater experience tended to view their learning as acquisitional where new knowledge is acquired and assimilated with their prior knowledge. In contrast, those with less experience viewed their learning as 'developmental'; a perspective that uses elements of participation and re-construction, where learners, through participating in learning activities, evolve with their learning as 'new understanding and new contexts are formed' (Hager, 2008, p684).

This study builds on ideas from adult learning (Eraut, 2004; Hager, 2004, 2008; Knowles, 2005; Sfard, 1998) and teacher learning (Kelly, 2006; Hodkinson & Hodkinson, 2005; Pedder et al., 2005) by demonstrating how teachers in this study value different perspectives on their learning. New findings in this study highlight how different secondary school teachers view their learning in different ways. In this sample, viewing learning as acquisitional through acquiring propositional knowledge (such as subject knowledge) is just as valid as viewing learning through developing and participation. Additionally, the research supports the suggestion that teachers learn in order to develop their practice, assimilate with their community, enhance their understanding and increase their capacity in their role in the school (Schoenfeld, 1999; Hodkinson & Hodkinson, 2005; Knowles, 2005).

Focusing on "what" a teacher learns, this study suggests a new model of teacher knowledge, building on previous models (see figure 4.8). New knowledge, differing from the models elaborated in the literature, evidenced the existence of self-knowledge; knowledge that centred around a teacher's self-efficacy and their role in the school.

Although Banks et al.'s model (1999) considered personal subject construct, there was no clear articulation on a teachers' self; for example, the way they communicate, deal with other adults, tackle their anxiety, improve their time management and organise their professional lives. This research showed the importance of these aspects to practising secondary school teachers.

Furthermore, as section 2.3.1 explained, the original models did not place any emphasis on which parts of a teacher's knowledge were the most prominent, showing them all as equal value. Elaborating on previous models, this research, in table 4.3, showed both the types of knowledge that teachers considered important and how often they occurred in the sample.

A criticism of previous models is that they were objective, static and non-changing (for example Shulman, 1987). Differing contexts, new government initiatives, and schools prioritising different pedagogies affect and change what a teacher knows (or is expected to know). The new model encompasses these changes through use of the personal, external and school arrows that demonstrate the fluidity in teachers' knowledge. This, in turn, elaborates and builds on previous models using evidence from secondary school teachers.

Finally, this research offered a new perspective by using experience as a lens to view learning activities. As summarised in section 4.3, for the teachers in this study, their perceptions on the impact of learning activities changed with experience. Less experienced teachers tended to put a higher value on informal lesson observations compared to more experienced teachers. Conversely, more experienced teachers valued formal observations more highly than less experienced colleagues. Many of the activities

that were considered to be formal (whole staff training, department training, formal lesson observations) were favoured by more experienced teachers than those with less experience. This could be linked to how more experienced teachers tended to have an acquisitional, cognitive stance to their learning whilst less experienced staff favoured 'developmental perspectives'. As figure 4.12 demonstrated, a more developmental stance to learning involved aspects of informal activities such as informal lesson observations and informal meetings and talks with others.

This research also contested some aspects of the literature. Firstly, the types of activity the participants discuss challenge the typology of learning activities of Marsick et al. (2007) and align, to a greater extent, to the work of Lohman (2006). Elaborating, the data suggested that informal activities could be both planned and structured (for example visiting and observing other practitioners) or unplanned and serendipitous (for example meeting other practitioners at conferences and discussing pedagogy). This differs from the suggestion from Marsick et al. (2007) that informal activities are normally unplanned. The data both supported and elaborated on the work by Eraut (2004) in relation to informal activities. The examples from the data evidenced Eraut's (2004) three categories of informal learning (deliberative, reactive and implicit). In this study, deliberative informal learning was more prominent than the other two categories as participants instigated planned informal learning to better their practice. Reactive learning, as it is instantaneous, could possibly be more challenging for participants to recall. Implicit learning is based on classroom experience and the data suggested that only four participants describe their learning in this way. Focusing on secondary school teachers, this research elaborates on the work of informal learning authors (Opfer and Pedder, 2011; Meirink et al., 2010; Hoekstra et al., 2007; Lohman, 2006; Kelly, 2006; Hodkinson & Hodkinson, 2003, 2005; Eraut, 2007) by showing the prominence of

different informal learning activities for teachers. The prominence of each theme is evidenced by the number of different teachers that describe them. Informal lesson observations were discussed by 73% of the sample, informally meeting and talking with others was evidenced by 89% of the participants.

Finally, in relation to formal learning activities, there are areas in which this thesis supports and contests the literature. As elaborated in section 2.4.2, the literature presented a critical view of formal learning activities, arguing that a lack of differentiation and piecemeal approaches affected the effectiveness of teacher learning (Desimone, 2009; Hoesktra & Korthagen, 2011). This research supports the criticisms to some extent, by showing that 69% of the whole sample felt that formal CPD did not affect their learning. There were, however, key groups of participants, such as experienced teachers, who felt that some formal activities help their learning. This new information, building on the existing literature, evidences how the impact of formal learning cannot be discounted. Formal courses can be successful if they provide new understandings of familiar contexts (Hodkinson & Hodkinson, 2003) or are considered by the teachers to be relevant to their practice.

Formal observations are also considered to be learning activities by 76% of the participants. This supports Coe et al.'s stance on observations in that they provide professional development if they allow opportunity for teachers to reflect on their practice with supportive and constructive feedback (Coe et al., 2014). If these conditions are not present, then formal observations become contrived and less effective. This is illustrated by 4% of the questionnaire participants and who, supporting the arguments of O'Pry & Schumacher (2012), did not feel formal observations helped their learning.

In summary, this thesis brought together key strands of literature and, through the data, suggests new ways to view secondary school teacher learning.

5.2 How has this research impacted my individual and workplace practice?

From the perspective of my own practice, this research offered an insight into how teachers learn at KHS. As a senior leader at KHS I monitor the development of staff, so understanding how staff feel they learn allows for better quality staff learning and development opportunities to be designed.

One drive for this research (as described in chapter 1) was the criticism by staff at KHS that some aspects of professional development were not effective because they felt the practices did not impact their learning. Reflections and perspectives of learning from teacher participants in this study made me consider if teachers' learning is as supported by the school as the learning of the students. As described in chapter 4, a prominent group of more experienced staff viewed their learning as acquisition. Less experienced staff appeared to view learning differently with a large proportion considering learning from developmental perspectives. Differing perspectives and approaches to learning should be considered when planning learning opportunities; in particular, senior staff at KHS had not explored prior learning or perceptions of learning so this thesis was a useful insight.

In relation to learning opportunities, many activities at KHS assumed homogeneity in background and knowledge of teachers. This research has shown that whilst many teachers have trained in similar ways, the impact of other schools, external agencies and

teachers own drive for development has led to different perceptions of knowledge and learning. Regardless of experience, teachers viewed their learning as a means to better their practice and were keen for learning to have a specific outcome; namely further development and improved effectiveness. Additionally, teacher participants valued reflection as a means to pause and think about whether learning is taking place and whether their learning is relevant. The relevance of learning is integral to staff; whether learning is for self-improvement, influenced by the needs of the school or linked to new performance management and appraisal system, where continued learning and development is an expectation. I considered, as a senior leader, whether KHS always explain the relevance of school led learning to staff; or considers whether there are enough learning opportunities to help teachers self-improve.

Combining aspects of teachers' knowledge base and reviewing learning on the spectrum of acquisitional and developmental knowledge enabled me to reflect on what type of activity is appropriate when planning teacher learning. Activities can be linked to the appropriate models of learning so that they have a greater impact on teacher learning. If we want to develop experienced teachers' practice in the classroom a learning technique is needed that will help them reconstruct their prior knowledge and experiences. The activity would need to be less formal to allow teachers to risk take and be creative with their practice. Conversely, if the government brings out new child safeguarding protocols teachers would need to "know" this and so acquisitional approaches (perhaps formally delivered in a lecture style) may be more appropriate. Matching activities with learning opportunities would be one way of impacting teacher learning. As a result of this research, the following changes at KHS have taken place:

1. There is now planned time for teachers to reflect on their learning. Staff have dedicated hour slots to reflect either individually or with a critical friend. Staff could watch a video recording of their lesson or talk through learning from a formal session with others in their departments.

2. Formal observations (led by senior staff) have been complemented with observations that are initiated with a focus by a teacher. Staff can choose the class, time and critical friend who observes them. After the observation a discussion is held about what was seen and then further learning opportunities are planned. A summative observation is planned in the future to discuss the success of the learning.

3. Previously, formal training sessions in the school have been didactic, with teachers being introduced to new teaching methods via one off workshops or lectures run by staff and/or external speakers. These lectures assumed that key knowledge of the techniques would be absorbed by the teachers so that they would adapt and change their practice. The research showed that this type of activity will not work for all teachers. Although a number of KHS teachers valued some formal courses (as shown in 4.3) some staff emphasised they needed to see the relevance of the learning that took place. To counter this criticism, the number of formal learning sessions was reduced and the remaining sessions started with clear objectives on the purpose of the activity to explain why the learning was relevant to the member of staff (Knowles, 2005).

4. The research showed that in order for teacher learning to be effective, teachers wanted the evidence that the technique or initiative being presented was based on

research of "what works" as well as allowing time for teachers to implement and reflect on the session's effectiveness. Training sessions now explicitly provide the background research in an attempt to show the relevance of the learning that takes place.

5. Single learning sessions are avoided and training has a repetitive rhythm. Rhythm in this instance means activities are repeated throughout the year, giving time for learning to occur. Rather than a "one stop" formal CPD session, the learning opportunities are constant. An example is improved written feedback to pupils; teachers have a combination of short sessions across the year with informal opportunities to try out practices in teaching. This is followed by time for reflection both singularly and with colleagues to judge the impact of their learning. Constant course evaluation allows the learning to be differentiated and adapted as it progresses.

5.3 Recommendations and links to national practice

The findings from this research have implications for teacher professional development in secondary schools. There is a strong argument to show that teachers' own agendas, prior knowledge, experience and preferences must be taken into account when designing professional development in and out of school. Schools and senior leadership teams, therefore, have an important role to play in promoting teachers' professional learning.

During the completion of this thesis, new policy emerged that supports my findings. Both Ofsted and the Department for Education are continuing to emphasise the importance of good quality professional development for teachers; critiquing teacher learner activities as being of variable quality, not sustained and not practice-based (DfE,

2014). The Teacher Development Trust (TDT) report (Cordingley et al., 2015) highlighted the problems and concerns with CPD in schools. Similarly to the report by the Sutton Trust (Coe et al., 2014), the TDT carried out a review of literature to create proposals for what does and does not work when looking to promote continuing professional development and learning (CPDL). Like the DfE, the TDT suggests that quality CPDL is measured by measuring the quality of teaching in a school (through observing teaching) and then subsequently the quality of student outcomes in terms of academic performance. Measuring the quality of teaching by student outcomes is complex and contentious as the quality of teaching is difficult to measure; views on what constitutes "good" teaching is subjective and student outcomes are affected by many different factors. Both reports recognise that schools are accountable for the quality of CPDL. Schools are under pressure to get CPDL "right" and, with time constraints, have to make decisions on what to prioritise in terms of whole school teacher learning and development.

In school CPDL, therefore, remains a vehicle for improving teacher learning. Leaders cannot avoid national bodies like the DfE or Ofsted linking the quality of teaching to student outcomes and so must plan CPDL that has impact on the learning of their staff. This study offers an insight into the perspectives of a representative sample of teachers in English secondary schools. This research can help senior staff design more effective learning activities. Senior leaders can relate this research to their own context. In particular, lessons learned from this case study can make senior leaders reflect on how they view the learning of their staff; experience, role and context play a part in how teachers engage with learning activities.

Senior leaders will need to plan activities that are differentiated to teachers' prior knowledge and perceptions of learning. Leaders should not disregard acquisitional models of learning as in some contexts they have a place and impact. For example, learning about a new rewards system may require an acquisitional model of learning which could lead to a short presentation to staff. If senior leaders wanted to help teachers improve their practice, they may plan a selection of more informal activities where staff have time to watch others and then discuss and reflect on their practice. If leaders want their teachers to be adaptable to change and develop a wider set of competences (Pedder & Opfer, 2011) they will need to promote 'developmental' learning. This study clearly shows the activities that do this.

Senior leaders should reflect on the concept of "forced learning". It is inevitable that sometimes teacher learning has to be shaped by the changing needs of the school (Engeström, 2001). As the school's needs change, senior leaders have to consider how to support teachers through professional development programmes. Careful thought has to go into choosing the right professional development programme rather than a "one size fits all" approach which was denigrated by teachers in this study. Leaders need sustained development programmes that understand the context of the school, can clearly demonstrate the purpose of the learning to the teachers and allow for teachers to collaborate. These points would help make learning less "forced" and more effective.

The teacher professional learning see-saw enables leaders from other schools to question the quality of CPDL in their schools including:

1. What domain of teachers' knowledge needs to be developed?

2. Are the activities appropriate for the type of learning (acquisitional/developmental) that is taking place?

3. Is there time for teachers to reflect on the impact of their learning?

4. Will be the learning be revisited or evaluated?

In addition, this research showed that "personal knowledge" has strong links to self-efficacy and subsequent performance of that teacher in their role. Senior staff could reflect on whether staff have the appropriate skills set for their role.

In summary, there are clear findings from this research that other leaders would find useful. As an under-researched area, the research should be replicated in other schools to find out if the outcomes are the same. The outcomes of this study need to be disseminated through informal mechanisms such as word of mouth, social media and modelling of new practice to other secondary schools. Formally, the research could form part of a paper that would share the research findings with other education researchers and professionals. Additionally, this research produces further questions that could be researched further, including:

1. How do teachers judge the effectiveness of their learning?

2. To what extent do teachers' roles and identities play in engaging with learning activities?

3. How do the contrasting formal and informal learning activities affect teachers of different experiences' learning?

Answering these questions would further help the improvement of teacher learning in secondary schools.

5.4 Limitations and issues with this research

This section considers the limitations of this research and my conclusions.

Methodology

As a researcher with a scientific background, I was always conscious of my previous positivist perspective on research. I had to ensure I picked appropriate methods that would add depth to the exploration of this topic. As an insider-researcher, the methods I chose had to ensure that participants' responses were clearly understood, interpreted and analysed and not influenced by my own understanding of teacher learning. I do acknowledge that my role in the school may have had an effect but I attempted to minimise this through measures outline in sections 3.6.2 and 3.6.3. Using interviews offered a unique depth into understanding the perspective of the teacher participant and this lead me to reflect about the number of interviews. A greater number of interviews would have offered a greater confirmability and more depth. Time constraints meant that I could not complete more interviews; semi-structured questionnaires were a compromise between detailed responses and number of participants.

Labelling teachers 'critical' and 'engaged' had little impact as those that were critical of learning practices still cared about their own learning. The labels were a useful tool to

ensure I sampled from a wide range of different perspectives on teacher learning but ultimately were too simplistic and subjective.

Analysis

Keeping a data analysis trail was very important. I kept reflecting that if another researcher were to analyse the data in the same way would they come up with the same or similar themes? This thought process ensured I kept questioning whether the data analysis process I was using was explicit, transparent and open. Sharing the analysis with participants gave them opportunity to view my theme formation which in turn, attempted to limit my effect as a researcher, improve credibility and increase inter-rater dependability.

Although the approach to this research was mainly qualitative, there were elements of quantitative through counting the occurrence of key themes. The main area of subjectivity was the grouping of chunks of data into key themes. Data were read and grouped in many of the analysis sections and my field notebook was used to write notes to justify the inclusion of data in groups; for example, in section 4.2 the knowledge of planning is grouped under classroom knowledge rather than, some may argue, subject and pedagogical knowledge. My justification for this grouping is that planning is a skill needed for the classroom, for many different lessons and not always linked explicitly to subject knowledge.

Ethical issues

There would always be a tension between my role within the school and my presence as a researcher. My knowledge of the school helped me:

1. To identify participants with different perspectives.

2. To understand “local” pressures, language and symbols. Alice, for example, talked, about “green pens” and from that I knew she was talking about in-class formative assessment.

A concern with a shared understanding is that assumptions can be made. If I did not know the school as well I may have questioned more and obtained deeper, more detailed data.

A further consideration was the impact of power relations on data collection, which, in turn, could affect the confirmability and trustworthiness of this thesis. As a member of senior staff I was concerned that staff may hold back information about their learning for fear of being seen as critical. I felt that the impact of power relationships was minimal, using two pieces of evidence. Firstly, interview participants, like Carol, clearly felt able to disclose their dissatisfaction with aspects of CPDL at KHS. Secondly, many staff knew that I was completing this thesis and were keen to talk about their learning when my research had finished. This had an indirectly positive outcome as those teachers became more interested in their own learning, in some cases more critical, and promoted a want for self and school improvement. Participants approached me in the corridor after formal sessions to tell me their thoughts on their learning. This doctorate was perceived by some teachers as a vehicle for the school to improve teachers CPDL. Teachers asked me “have you considered this?...” giving examples of good CPDL that aligned with the concluding part of this research. This helped me ensure I was on the “right track” when analysing my data.

Personal development

My own learning throughout this doctorate has been constant; my thinking changing on a regular basis. Not only have I a better understanding of andragogical principles, but I have a clearer understanding of how teachers perceive good quality teacher learning. This is helpful for my new role and for my own professional self-development. Other aspects and competences have changed: I have begun to improve my academic writing and now I further understand the importance of academic research.

In addition, synthesising my own model of teacher learning and development has allowed me to piece together three strands of research: "what" do teachers learn?; how do teachers view their own learning?; and what activities do teachers feel impact their learning and development? This is helpful not just for my own institution but for other secondary schools across England and beyond.

5.5 Concluding comments

Exploring teacher learning has not only allowed me a glimpse into the worlds of other teachers but has also made me continually reflect on my own learning and development. I have felt constantly challenged to question "why?" both in my research and now in my practice. The "why?" has led me to the end point of this research which has not only ended in the writing of this thesis but has led to the development and improvement of teacher learning in one workplace, KHS. If, as the government suggests, good quality teacher learning leads to good quality teaching (and subsequent student outcomes) then I hope this research proves useful to others in making their schools better.

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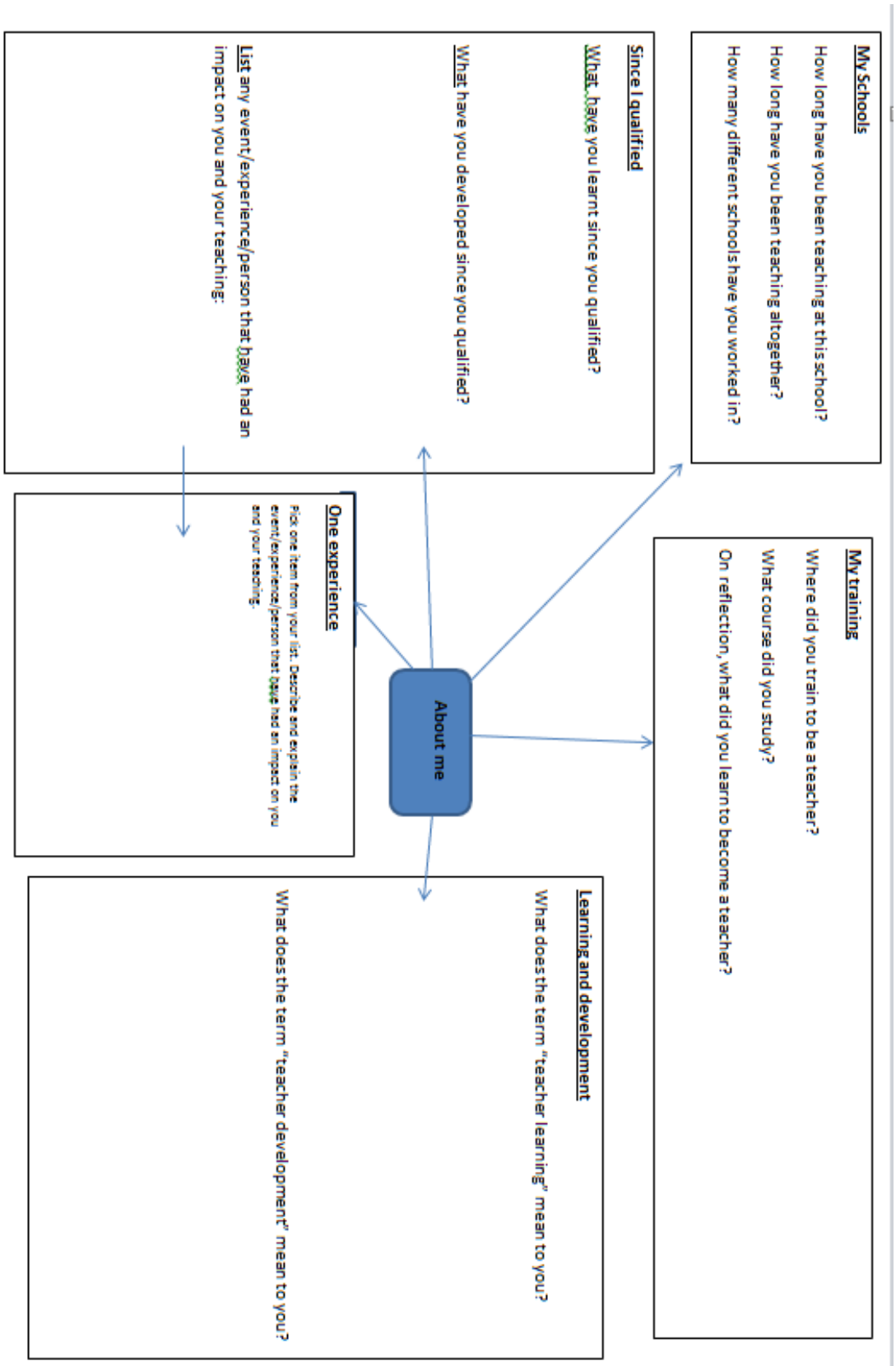
Appendix A Research Schedule

When?	What will be involved?	What data is collected?
October 2013 – December 2013	A short written activity about you as a teacher and your experiences.	Your written work will be collected and analysed. This will be used to collect data on you in the interview.
October – December 2013	An interview lasting between 40 and 60 minutes.	An audio recording of the interview followed by a written transcript.
Ad hoc throughout the year	A short (A4 page) evaluation "honesty" sheet for you to reflect on any learning activity.	Your reflections on each event will be collected and analysed.

Appendix B Pre interview task



Appendix C Questionnaire

Teachers' professional learning: perspectives and reflections of practising teachers

Damian Loneragan, EdD student, The Open University

I am a practising secondary school teacher who is currently an EdD (Doctorate in Education) student at the Open University. I am interested in how teachers learn and develop their practice to attempt to improve their teaching. In our day to day practice we encounter many different experiences which affect our practice and can help or hinder our development. I am hoping this project will explore how teachers perceived their learning and what matters to them.

Teachers learn and improve their practice in a variety of ways through a variety of activities. This research is set to explore what teacher professional learning is, how it happens, what it is affected by and how it is linked to professional development and change in beliefs and practice. The project will focus on secondary school teachers.

I would like you to take part in a short questionnaire to find out your perceptions on your own learning. The questionnaire should take you no longer than half an hour to complete.

To meet the requirements of the Data Protection Act (1998) all data collected will be anonymised and I will ensure you are not able to be identified or associated with the data reported. Data collected will be held securely and used only for the purposes of this doctorate project. All paper data will be held in a lockable file system. Any e-data will be held electronically and secured via password protection. The data will be destroyed after five years from the end of the research project. The findings from this research will be written up as part of my doctoral thesis, however if you would like a summary of my findings then please do not hesitate to contact me.

I hope you will choose to participate in this research as it may help you think differently about your own learning. The only risk associated with this project is the time you have to commit for interviews, observations and the discussion of my observations.

Thank you for your time and please do not hesitate to contact me should you require any clarification about the research.

Damian Loneragan

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Supervisor: Dr Gwyneth Owen- Jackson

The Open University

gwyneth.owen-jackson@open.ac.uk

Teachers' learning and development: A questionnaire.

Code = Subject taught=

Job Title = Gender =

1. How many years have you been teaching:

a) at this school? _____

b) overall? _____

Research Questions: How do practising secondary school teachers perceive their own learning and development?

2. Think back to when you trained to be a teacher – What knowledge and skills did you learn to become a teacher? **Write a list below:**

3. Consider your list above – **circle** any of the aspects you feel you are still developing. Explain below why you think you are still developing these aspects.

Research Question: What activities affect secondary school teachers' learning and development?

4. Consider the list below. Circle any activities that have helped your learning and development since you qualified as a teacher.

Lesson Observation (Formal) **Lesson Observations (informal)**

Whole School training sessions **Department training sessions**

Informal meetings with colleagues **Co-coaching sessions**

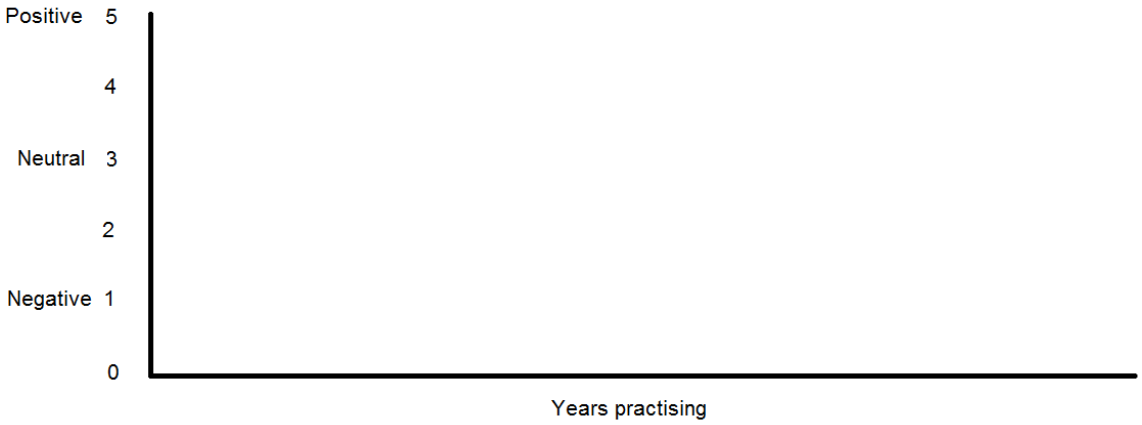
Newspaper articles

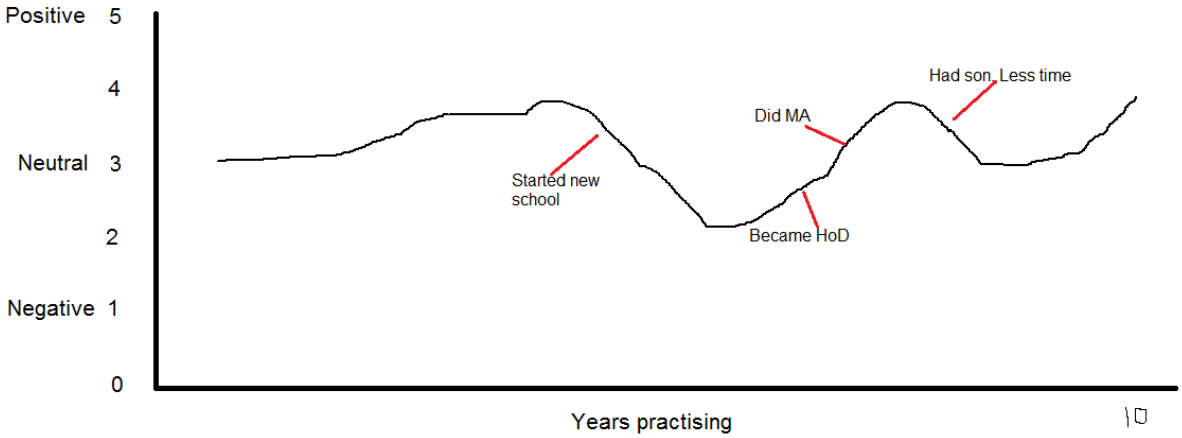
5. Please **list below** any other activity/event not included in the list in question 4 that have helped your learning and development since you qualified as a teacher. Feel free to name people or particular informal/formal events as they will be anonymised later:

6. Describe an activity/event/person/interaction that you feel has helped you learn and develop as a teacher. **Please name the event, briefly describe what happened and explain why you feel it helped your development.**

7. Describe an event that was intended to help you learn but you found less than useful. **Please name the event, briefly describe what happened and explain why you feel it was less useful.**

8. If you could draw a graph of your development as a teacher over time what would it look like? On the graph below sketch a line to indicate how you feel you learning has changed as you have been practising. Label key events. See my example below.





Research Question: How do secondary school teachers conceptualise the terms professional learning and professional development?

9. What does the term "teacher learning" mean to you?

10. What does the term "teacher development" mean to you?

Thank you for taking time to complete this questionnaire

Appendix D Interview schedule

Question	Provisional rationale / RQ link
Settling question: I see you trained at _____ what was your favourite part of the course? I see you have been teaching for X years… What is your most vivid memory of this school?	To put the participants at ease the first questions will be linked to their pre interview sheet.
When you trained to be a teacher what, in your opinion, was the most important aspect of teaching you learnt. Why? Is there anything you felt you learnt that is now not relevant?	RQ2. What do practising secondary school teachers think they learn and develop
Since qualifying, do you think you have learnt anything more? What? What, (for example an activity/person) brought about this learning? How has this learning influenced your classroom practice?	RQ2. What do practising secondary school teachers think they learn and develop
What type of activities do you think you learn and develop from?	RQ3. What activities impact secondary school teachers' learning and development?
What have been the biggest influences on you and your learning and development as a teacher since you qualified?	RQ3. What activities impact secondary school teachers' learning and development?
Do you think that learning and developing on your own is different from learning with others? Could you describe any incidents when you have learnt from others? What happened?	RQ3. What activities impact secondary school teachers' learning and development?
Do you think you have learnt anything whilst teaching in the classroom? Is your learning in the classroom any different from outside of the classroom? Why/why not.	RQ3. What activities impact secondary school teachers' learning and development?
Could you give me an example where you have learnt from an INSET course? If yes – what made you learn from this? If no – why do you think you haven't learnt from this activity?	RQ3. What activities impact secondary school teachers' learning and development?
If you could create an activity or experience to promote your own learning and development what would it involve?	RQ3. What activities impact secondary school teachers' learning and development? RQ1b. How do practising secondary school teachers describe their own learning and development?
You have defined what teacher learning means to you. Is there anything you want to add to this?	RQ1a. How do secondary school teachers conceptualise the terms professional learning and professional development? RQ1b. How do practising secondary school teachers describe their own learning and development?

You have defined your own version of teacher development. Is there anything you want to add to this?	RQ1a. How do secondary school teachers conceptualise the terms professional learning and professional development? RQ1b. How do practising secondary school teachers describe their own learning and development?
What do you think is the relationship between the terms "teacher learning?" and "Professional development"?	RQ1a. How do secondary school teachers conceptualise the terms professional learning and professional development?

Appendix E Reflection and evaluation sheet

Learning/development evaluation sheet

Participant name (This will be removed for analysis and presentation):

1. Name the Training/session you attended:

2. What was the proposed purpose/objective of the training/session?

3. Did you feel the session met this objective? (circle yes or no) Yes No

Please explain your answer

4. Do you feel this session has helped you learn or develop in any way? Yes No

Please explain your answer

5. How could the session have been improved to help you in your development?

Appendix F Information for participants and letters

F1 Initial study letter

Teachers' professional learning: perspectives and reflections of practising teachers

Damian Loneragan, EdD student, The Open University

I am a practising secondary school teacher who is currently an EdD (Doctorate in Education) student at the Open University. I am interested in how teachers learn and develop their practice to attempt to improve their teaching. In our day to day practice we encounter many different experiences which affect our practice and can help or hinder our development. I am hoping this project will explore how teachers perceived their learning and what matters to them.

Teachers learn and improve their practice in a variety of ways through a variety of activities. This research is set to explore what teacher professional learning is, how it happens, what it is affected by and how it is linked to professional development and change in beliefs and practice. This research will focus on secondary school teachers.

You have been asked if you would like to take part in a small focus group as part of a wider project for my doctoral thesis. I would like to collect information about how you learn and how you view learning and development.

When	**What will be involved**	**Data collected**
January 2013	A commitment of 90 minutes of your time. You will be asked to talk, with your colleagues, about the topic of teacher learning and development (see below)	An audio recording will be taken of the focus group providing all participants are happy for their discussion to be recorded. The discussion will be written out in a

		transcript.

Questions that will be considered:

What do you understand by the term "teacher learning?"

What do you understand by the term "professional development?"

Can you describe an incident that occurred whilst you were training that you felt you learnt from?

Can you describe an incident that has occurred since you began teaching as a qualified teacher that you felt you learnt from?

Is there any change in your learning since you qualified?

Participation in this focus group is entirely voluntary and you may withdraw at any time. If you withdraw after the data has been collected I will seek your permission to use the data .

To meet the requirements of the Data Protection Act (1998) all data collected will be anonymised and I will ensure you are not able to be identified or associated with the data reported. Data collected will be held securely and used only for the purposes of this doctorate project. All paper data will be held in a lockable file system. Any e-data will be held electronically and secured via password protection. The data will be destroyed after five years from the end of the research project. The findings from this project will be written up as part of my doctoral thesis, however if you would like a summary of my findings before hand then please do not hesitate to contact me.

I hope you will choose to participate in this project as it may help you think differently about your own learning. The only risk associated with this project is the time you have to commit for interviews, observations and the discussion of my observations.

Thank you for your time and please do not hesitate to contact me should you require any clarification about the research.

Damian Loneragan [redacted]

Supervisor: Dr Gwyneth Owen- Jackson

The Open University

gwyneth.owen-jackson@open.ac.uk

F2 Main study letter

Teachers' professional learning: perspectives and reflections of practising teachers

Damian Loneragan, EdD student, The Open University

I am a practising secondary school teacher who is currently an EdD (Doctorate in Education) student at the Open University. I am interested in how teachers learn and develop their practice to attempt to improve their teaching. In our day to day practice we encounter many different experiences which affect our practice and can help or hinder our development. I am hoping this project will explore how teachers perceived their learning and what matters to them.

Teachers learn and improve their practice in a variety of ways through a variety of activities. This research is set to explore what teacher professional learning is, how it happens, what it is affected by and how it is linked to professional development and change in beliefs and practice. This research will focus on secondary school teachers.

You have been asked if you would like to take part in this research project as you are a qualified secondary school teacher. I would like to collect information about how you learn and how you

view learning and development as you carry out your day to day teaching. I will collect information about you in a variety of ways over the period of one academic year, 2013-2014. This is explained in the table below:

When?	What will be involved?	What data is collected?
October 2013 – December 2013	**A short written activity about you as a teacher and your experiences.**	**Your written work will be collected and analysed. This will be used to collect data on you in the interview.**
October – December 2013	**An interview lasting between 40 and 60 minutes.**	**An audio recording of the interview followed by a written transcript.**
Ad hoc throughout the year	**A short (A4 page) evaluation "honesty" sheet for you to reflect on any learning activity.**	**Your reflections on each event will be collected and analysed.**

Participation to this project is entirely voluntary and you may withdraw at any time. If you withdraw before February all data collected about you will be destroyed. If you withdraw after Monday 3rd February 2014, I will ask your permission to use your data, which at this point, will be anonymised.

To meet the requirements of the Data Protection Act (1998) all data collected will be anonymised and I will ensure you are not able to be identified or associated with the data reported. Data collected will be held securely and used only for the purposes of this doctorate project. All paper data will be held in a lockable file system. Any e-data will be held electronically and secured via password protection. The data will be destroyed after five years from the end of the research project. The findings from this research will be written up as part of my doctoral thesis, however if you would like a summary of my findings then please do not hesitate to contact me.

I hope you will choose to participate in this research as it may help you think differently about your own learning. The only risk associated with this project is the time you have to commit for interviews, observations and the discussion of my observations.

Thank you for your time and please do not hesitate to contact me should you require any clarification about the research.

Damian Loneragan

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Supervisor: Dr Gwyneth Owen- Jackson

The Open University

gwyneth.owen-jackson@open.ac.uk

Appendix G Consent forms

G1 Consent form for initial study

Consent form for persons participating in a research project

Teachers' professional learning: perspectives and reflections of practicing Teachers.

Name of participant:

Name of principal investigator(s): Damian Loneragan

1. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written statement in plain language to keep.

2. I understand that my participation will involve a focus group and I agree that the researcher may use the results as described in the plain language statement.

3. I acknowledge that:

   (a) the possible effects of participating in this research have been explained to my satisfaction;

   (b) I have been informed that I am free to withdraw from the project at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;

   (c) the project is for the purpose of research;

   (d) I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements;

   (e) I consent to have the data generated from my participation in the study collected and stored in both paper and electronic forms. I have been informed that any data generated will be stored securely in a lockable file system. Any e-data will be held electronically and secured via password protection. All data generated will be destroyed after five years of the proposed completion of my doctoral thesis (2020).

   (f) if necessary any data from me will be referred to by a pseudonym in any publications arising from the research;

   (g) I have been informed that a summary copy of the research findings will be forwarded to me, should I request this.

I consent to this focus group being audio-taped ☐ yes ☐ no (please tick)

I wish to receive a copy of the summary project report on research findings ☐ yes ☐ no (please tick)

Participant signature: Date:

Contact: Damian Loneragan (Student number (W6349107))

Supervisor: Dr Gwyneth Owen-Jackson, The Open University, gwyneth.owen-jackson@open.ac.uk

G2 consent form for main study

Consent form for persons participating in a research project

Teachers' professional learning: perspectives and reflections of practicing Teachers.

Name of participant:

Name of principal investigator(s): Damian Loneragan

1. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written statement in plain language to keep.

2. I understand that my participation will involve two interviews and two observations of my teaching and I agree that the researcher may use the results as described in the plain language statement.

3. I acknowledge that:

   (a) the possible effects of participating in this research have been explained to my satisfaction;

   (b) I have been informed that I am free to withdraw from the project at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;

   (c) the project is for the purpose of research;

   (d) I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements;

   (e) I consent to have the data generated from my participation in the study collected and stored in both paper and electronic forms. I have been informed that any data generated will be stored securely in a lockable file system. Any e-data will be held electronically and secured via password protection. All data generated will be destroyed after five years of the proposed completion of my doctoral thesis (2020).

   (f) if necessary any data from me will be referred to by a pseudonym in any publications arising from the research;

   (g) I have been informed that a summary copy of the research findings will be forwarded to me, should I request this.

I consent to the interviews being audio-taped ☐ yes ☐ no (please tick)

I wish to receive a copy of the summary project report on research findings ☐ yes ☐ no (please tick)

Participant signature: Date:

Contact: Damian Loneragan (Student number (W6349107))

Supervisor: Dr Gwyneth Owen-Jackson, The Open University, gwyneth.owen-jackson@open.ac.uk

Appendix H OU Research committee approval

The Open University

From	Dr Duncan Banks Chair, The Open University Human Research Ethics Committee
Email	duncan.banks@open.ac.uk[1]
Extension	59198
To	Damian Loneragan, CREET
Subject	*"Teachers' professional learning: perspectives and reflections of practicing teachers."*
Ref	HREC/2012/1273/Loneragan/1
Red form Submitted	12 November 2012
Date	14 November 2012

Memorandum

This memorandum is to confirm that the research protocol for the above-named research project, as submitted for ethics review, is **approved** by the Open University Human Research Ethics Committee.

Please make sure that any question(s) relating to your application and approval are sent to Research-REC-Review@open.ac.uk quoting the HREC reference number above. We will endeavour to respond as quickly as possible so that your research is not delayed in any way.

At the conclusion of your project, by the date that you stated in your application, the Committee would like to receive a summary report on the progress of this project, any ethical issues that have arisen and how they have been dealt with.

Regards,

Dr Duncan Banks
Chair OU HREC

Appendix I Focus group: methodology and analysis

This appendix elaborates on the methodology and analysis of the focus group.

Methodology of the focus group

Six NQTs from KHS were approached to take part in the focus group and five chose to take part. (Morgan (1995) and Kitzinger (1995) suggest four to eight participants as "ideal"). Each participant was given the opportunity to read and take away an information sheet (See Appendix F1) and asked to sign a consent form (See Appendix G1). In addition each participant was asked to answer three questions in order to provide additional data about their "context", these were:

1. Why did you become a teacher?
2. What course did you attend to train as a teacher?
3. How do you think you have developed whilst training to be a teacher?

Purposive sampling (Silverman, 2000) was used to select NQTs due to the nature of the learning experiences that they have. This group of teachers have just finished their teacher training and were in their first year of practice. The reason for their selection was that newly qualified teachers have a development programme and standards they would have completed in order to achieve their qualified teacher status. This meant that they should potentially have undertaken a variety of formal and informal learning experiences that they can share and discuss. In addition, they were continuing on an induction programme to help their development (DfE, 2012) and so have recent experience of formal learning and development programmes. Kitzinger (1995) and Morgan (1995) argue that if participants have little involvement in the topic then data is harder to generate. The title *NQTs* offered a form of homogeneity that capitalised on any shared

experiences. This was evident in the data that was collected (see the Appendix C for further detail). There should also be no formal hierarchy or power relationships between participants (Kitzinger, 1995) however it was clear that some participants were more articulate than others when discussing their learning.

The main aim of the focus group was for the participants to discuss their perceptions and experiences of their own learning and development. The focus group was intended to feel as "natural" as possible despite being an unnatural event (Kitzinger, 1995). The artificial nature of the focus group could encourage participants to withhold interesting data. To overcome this, an environment where 'facilitators shared participants' culture and experiences' was created because 'shared experience and identity with the focus group facilitator can provide additional opportunity for authentic sharing among focus group participants' (Rodriguez, 2011, p.403). An example was the location of the focus group. The focus group was held in a class room, rather than a school interview room and at a time where NQTs usually have meetings so it was not an additional burden to their work day.

To aid transcription an audio recorder was used. Whilst participants agreed to the use of audio equipment (see Appendix B) it was acknowledged that this could affect data collection and add to the unnatural feel. This was overcome by placing the equipment in a suitable but not observable location and discussing why it needed to be used.

I gave a short introduction before starting the focus group and then allowed the group to discuss each question in turn. The focus group ran for just under ninety minutes. This was justified by research that stated that one hour means that participants may clock watch and two hours may be too onerous on time (Seidman, 1991, p.13). My

intervention in the focus group was limited to steering the conversation back on track and bridging any silences. The monitoring of the focus group emphasised to me the fine line between too much or too little intervention. My monitoring of the conversation could be considered to be an influence of power over the group (Seidman, 1991). The flow of the discussion was altered if it moved away from the topic I wanted to focus on. I, as researcher, had power over whether the conversation was relevant or not. I needed to balance the need to cover the research questions but without discounting any data that may arise out of an unplanned diversion the conversation took. When a deviation occurred I allowed the conversation to run until it came to a nature end whereby I redirected the conversation back to my planned questions. Fortunately this did not impact on the time constraints of the focus group and prevented me from asserting excess authority possibly damaging the collegial atmosphere of the group.

The transcript was shared with the participants so they could validate it was a true and accurate record.

Analysis of the focus group data

The analysis is organised and linked to each research question.

Focus Group Question	**Research question link.**
What do you understand by the term "teacher learning?"	• How do secondary school teachers conceptualise the terms professional learning and development?
What do you understand by the term "professional development?"	• How do secondary school teachers conceptualise the terms professional learning and development?
Can you describe an incident that occurred whilst you were training that you felt you learnt from?	• How do practising secondary school teachers perceive their own learning and development? • What activities do secondary school teachers engage in that they feel affect their learning and development?
Can you describe an incident that has occurred since you began teaching as a qualified teacher that you felt you learnt from?	• How do practising secondary school teachers perceive their own learning and development? • What activities do secondary school teachers engage in that they feel affect their learning and

	development?
Has there been any change in the way that you learn since you qualified?	• How do practising secondary school teachers perceive their own learning and development? • What activities do secondary school teachers engage in that they feel affect their learning and development?

Approach to analysis of initial study data

Approach to analysis of the data from the initial study.

The data generated from the focus group came in three forms: A focus group transcript, my notes from attending the focus group and the personal biographies that the teachers brought with them. The approach to the analysis consisted of reading the focus group transcript and identifying, using coding, specific parts of the text linked with teacher knowledge and teacher learning. The table below demonstrates the initial coding:

Table - Initial codes used in data analysis

Teachers' knowledge base	**Type of learning (from Eraut (2004)**	**Learning activity (preceded by F=formal, I = informal for example IFCE or FFCE)**
PK (Pedagogical knowledge)	DL (deliberative learning)	FCE (from classroom experience)
SK (Subject knowledge)	RL (Rapid Learning)	LFO (learning from others)
SCK(School knowledge)	IL (Implicit Learning)	LWO (learning with others)
		LOOC (Learning out of classroom)
		LFS(Learning from students)

As the analysis progressed it became apparent that my initial codes overlapped and the data was interrelated. To counter act this I double coded where appropriate and linked the different aspects that were similar. Below is an example:

> *…I think one of the trainings I really appreciated was doing a role play and putting yourself in the place of a child and your language choices. Having grown men and grown women shouting at you really threw me and some of the scenarios to see how you felt being screamed at and those language choices really helped me. Especially when you wanted to be a little bit more stricter or sterner about those language choices and what affect they then create. So screaming to someone at the top of your voice is that really… is that going to have any effect whatsoever… I think that really helped me and whenever I look back now that was the training I really appreciated…*(Carol)

This section of the transcript was coded FLOOC (Formal learning out of the classroom) / FLWO (formal learning with others) and also PK/DL.

The approach I selected is similar to that of Glaser and Strauss (1967) whereby there is an attempt to create categories. The categories are saturated with data and finally the categories or codes become the framework for analysis.

A tension with coding, described by Cohen et al (2003, p283) is that there is a tendency for researchers to 'atomise' the data and 'lose the synergy of the whole'. To avoid this I have annotated parts of the transcript with themes that cannot be categorised but may also be interesting and also attempted to change and refine the coding as the analysis continues. Silverman (2000) also recommends that as well as sequencing and relating different aspects of talk, researchers should also examine the identities that the speakers take on through their talk. I have attempted this in the analysis particularly as NQTs are caught in a tension of not being students teachers whilst not having the personal efficacy

of being established teachers. The next section will focus on the current analysis of the data from the focus group.

The data has produced some evidence to answering my research questions but will yield more results as it is analysed further.

The initial study offered an interesting insight into how these particular NQTs learn and develop. The focus group allowed a lot of data to be generated however there is still a lack of depth in answering some research questions. This is partly due to time constraints and due to the nature of the focus group compared to individual interviews. The participants were able to discuss the many ways in which they learn but when asked more challenging questions (like the differences between learning and development) the data was not as rich and I noted in my notes there were more silences and pauses. From a methodological perspective the transcription process was challenging. As Kvalé (1993) states the transcription freezes the interview in time. To improve this further for my main project my transcription needs further identification of inflections of voice and the slowing of speech to add as much detail as possible.

The issue of reactivity was not noticeable. The evidence I draw conclusion from is the way the participants disclose personal information (for example Anne's 'jar of thoughts' and Beth's lack of confidence) to each other and myself. The only issue was the dominance of Anne throughout the transcript. In order to make the participants feel more at home the NQTs voted where to hold the focus group – Anne's room was selected. The product of this was that Anne was able to draw on her physical environment to emphasis certain anecdotes she was telling. To avoid this in future a neutral classroom will be selected.

The problem with "groupthink" (Boateng, 2012) was difficult to untangle as any consensus seemed to be true. One way in which was successful to validate the NQTs answers was the use of the biography. In some cases (in particular the sensitive

discussion about confidence) the NQTs had already mentioned these aspects in their biography. This reduces the likelihood of group think if more than one source of data validates a statement. If I were to continue to explore the perceptions of these NQTs I would use an individual interview to triangulate the data and ask them similar questions to see if their answers were still the same.

A final concern is the way I ask questions. I wanted my questions to be as open as possible but this leads to some vagueness in my questioning (see Appendix K). To counter act this I wrote my questions down beforehand but this did not apply to the questions that I interjected with to elicit more data. In future I will need use my field note book to record any further question I need to ask and be as reflexive as possible about the way I ask the questions.

The process of carrying out the initial study enabled me to reflect on the methods I have chosen for my main research project.

I intend to continue with a qualitative, interpretivist approach to explore teacher learning. I plan to employ the following research methods[3]:

1. Interviews of practising teachers: to explore in greater depth individual teacher's perceptions of their learning and the activities that affect their development.

2. Semi structured questionnaires: to relate the issues and perceptions discovered in the interviews to see how relatable they are to the rest of the sample in this case study.

The focus group has enabled me to reflect on how I ask questions. In the evaluation I considered that some of my questions from the focus group were over long and led to vague answers but rich in detail with respondents using real experiences to accentuate what they are saying. I will need to improve the clarity of my questions but try not to lose the opportunity for rich data collection. The structure of an interview is less fluid as a focus group as it only depends on the conversation of two people, one of which is me.

This results in the data being dependent on the questions I ask and the relationships I build with the participants.

Returning to my proposed main study, I hope to sample six teachers and I will look to select participants based on their attitude to learning and the amount of time they have been practising. To define 'attitude' I need to turn back to the data from the focus group. The participants of the focus group gave the impression that they were all active and engaged in their own learning and development and referred to the 'grumpy old man in the staffroom'. The NQTs inferred that the 'grumpy old man' has a negative or perhaps critical stance to the learning that takes place in the school. The reverse of this category I will define as "engaged" where a teacher appears to be engaged in improving their learning. This may appear to be generalising that "critical" teachers are disengaged from their learning. This is not meant to be the case and I will need to consider carefully the impact of this label on my research. I will also need to spend the next few months identifying and approaching appropriate participants to see if I can identify teachers who may be in both categories.

I hope to investigate the following groups of teachers:

- Teachers with 1 – 6 years experience. One engaged, one critical.
- Teachers with 7 – 14 years experience. One engaged, one critical.
- Teachers with 15+ years of experience. One engaged, one critical

I will need to review the demographics of the teaching staff when considering the proportions of male/female participants I select and when confirming suggested bands of experience. This will ensure that the sample selected matches that of the case study. With a small sample size this may be challenging.

On a conceptual level I will need to narrow down the focus of the research. I intended to explore teachers' perceptions of learning and development, their perception of a teacher's knowledge base and the activities that affect a teacher's learning and

development. I will now focus on the activities that affect a teacher's learning and from this perspective I can elicit ideas about a teacher's knowledge base and their perceptions of learning and development. I will continue to review and re-review my literature in light of this.

I also need to explore the idea of personal efficacy which I did not consider at the start of this report. I may need to focus some interview questions around exploring how a teacher's personal efficacy affects how they learn. The data showed how important this was to NQTs so it will be interesting to see if this is the same for more experienced teachers.

In summary, the initial study uncovered some interesting information that partially covered my research questions. I need to explore this further and in more depth with a variety of teachers of different experiences. This will allow me to understand how practising teachers conceptualise their own learning and development.

Main themes and discussion from the data

RQ1. How do secondary school teachers conceptualise the terms professional learning and development?

The NQTs have differing views on professional learning and development. Anne has a mechanistic view of learning (Hoban, 2002):

> *…actually the more I teach the children the more I need to learn myself and then developing (sic) my teaching as a result…(Anne)*

For Anne, her teaching develops after she completed the learning. Beth agreed with Anne and stated:

> *… yeah I was going to say that you can't develop if you don't learn something…. you need to learn and take that learning to develop your practice…* (Beth)

Carol**'s** and Edward's views are more cyclical, similar to Kolb's (1984):

…development is the product of learning and the reflection and after your development you go back to this process…(Carol)

…I think that you learn something then develop it through experience I suppose …(Edward)

Carol and Anne continued the discussion and Anne referred to learning as 'stuff'. This is similar to the formal knowledge base proposed in section 2.1 of the literature review. Anne's views on learning and development continue to develop:

*… I think sometimes…. A minute ago I said that I think you learn a "thing" a "stuff" and then you develop as a result of it but from what you (*referring to Carol*) have just said about you learn from the development. I think actually learning doesn't have to be the exact "thing". I think sometimes you develop without planning too. Like we might look back in two years time and developed something without planning too and we learn from that…* (Anne)

The focus group then allowed the participants to develop a new way of considering their learning:

… you look in hindsight at your development and don't even realise it happens… (David)

… like an unconscious thing… (Anne)

…. Mmmm (in agreement)… (David)

... I think sometimes you can learn from development rather than just learn something and

then develop… (Anne)

…I suppose it could be learn and development rather than development and learning… (Carol)

… like the chicken and the egg they are both kind of linked and yeah… (Anne)

… yeah it could go learning development learning… (Carol)

… it's like a cycle isn't it… (Beth)

*… yeah… (*Anne)

... a cycle... (Carol)

This research question clearly needs further exploration to compare the different opinions and views of teacher learning and development. Unfortunately the nature of the focus group was not able to add the depth of data that individual interviews would have. This justifies the use of individual interviews in my main research project.

RQ2. How do practising secondary school teachers perceive their learning and development? What do they think they learn and develop?

The data suggest that the NQTs sampled have changing ideas about their own learning moving from an acquisitional perspective (Sfard, 1998) to the exploration and development of their practice. This is possibly linked to the change in identity from a student teacher to a newly qualified teacher:

> *…I was keen on watching. I thought "I must make sure I am doing this, and I must make sure I am doing this" and now I feel I am actually just teaching rather than ticking boxes (laugh) rather than thinking "oh I know I must do this" now I just do what is relevant ... after it I was thinking "Oh I never would have done this in my GTP" and it's because you have got the freedom more to try stuff out and even this year I am learning how I teach…(Anne)*

In this example Anne seems surprised that she is still learning however later she agrees with others that learning for teachers is a continual process. The "tick box" nature of the teaching standards (DfE, 2012) is discussed by all the participants and is a running theme through one section of the data. At this stage that the respondents are NQTs and so their experiences may differ from other teachers so it will be useful to explore the idea of "continual learning" further with experienced teachers. This will be particularly interesting when considering those that qualified before the teaching standards were introduced.

Linking with the ideas in section 2.1 the NQTs are clear that they feel they are developing certain aspects of their knowledge base. There are some examples from the participants that they feel they are learning about subject knowledge:

> *…Yeah, I think that as well I think where my degree was in media and I wanted to become an English teacher I chose to do a PGCE so I could gain good subject knowledge…* (Carol)

There were many more examples where the teachers discussed learning pedagogical skills and the informal and formal experiences that lead them to learn. Anne provided an example where she had learnt a technique from a seminar but it only became relevant and memorable to her when she applied it during a real life experience of dealing with disruptive students.

> *… so something that was said in a training session was "Oh try and make a positive phone call"… so for the naughty ones, the ones that they teacher had said "these will be a bit of a handful" .I purposely searched for something they had done well and as soon as I had the chance I phoned home. …As soon as I phoned the parents when they were a nightmare they were so much more supportive … I suppose tying it to the memory of all the children having to leave the classroom for this massive boy and then having to phone the parents that is something that will stick in my memory…* (Anne)

The data also shows that the NQTs find it easy to identify and discuss pedagogical aspects of their knowledge base. Anne and Carol identify curriculum matters like the assessment model in English. Anne and Carol are from the same curriculum department so the commonality between them generated more data specifically linked to the English curriculum. When Anne discusses other subjects, her lack of specific subject knowledge in that area causes a "joke" amongst the participants:

> *…Like you might know all the chemical symbols.. okay you might find a new way of teaching… sodium or something…* (Carol/Anne laugh) *or they might discover*

a new chemical because everything keeps changing all the time… I think there must always be new ways of learning the periodic table…or … (Anne)

… or even learning it full stop might be difficult… (David)

(Anne/David laugh)

… yeah well… (Anne)

… that's quite a challenge… (David)

This demonstrated the collegial nature of the group as they felt comfortable to challenge each other's misconceptions.

Aside from subject knowledge, a concept that they participants felt they learnt is linked to personal (or self) efficacy (Bandura, 1977). This is something not conceived in the models of Shulman (1987), Borko and Putnam (1995) and Banks et al. (1999) as part of a knowledge base as it is not knowledge as such.

In the example below, when asked about what she learnt to become a teacher Beth discusses teachers' professional knowledge but uses the word "skills" to describe aspects of pedagogy.

…yeah I had reflection and the other thing I thought about when you asked the question is erm the skills you learnt… sort of like the behaviour management skills but then more than that.. the sort of soft skills that you learn as a person sort of like confidence, resilience… things that you need to learn erm to kind of.. yeah keep going…. Even if things aren't going your way… (Beth)

She then moves on to discuss the idea of "confidence". This is discussed by the participants at other intervals in the focus group including David when the group was asked to discuss what they think they learn:

…Confidence is a big thing for me at the moment, your lessons get better, well I find that my lessons get better with confidence…(David)

Anne who reiterates Beth's idea of "soft skills" felt that she has been learning to deal with adults as well as children:

> *…I think I learnt a lot about adults……like the behaviour issues I found with adults harder that children because teenagers, at the end of the day, I would say "okay if you are not going to do this… choose to do this or choose to go to isolation…" I think if I had said to an adult "… choose to go to isolation (group laughs) then they probably would have told me where to go…" erm I think I found that a lot harder, not that I didn't get on, it's just that asserting myself is the bit that I struggled with…*(Anne)

Another example when discussing working in teams Carol talked about learning to 'have a voice in your own department', which-again, infers an increase in confidence. In other examples the group talk about "learning" to be organised, to have better time management and to deal with parents. The evidence suggests that newly qualified teachers feel they learn about themselves, their own confidence and self-esteem. This data was validated through comparison to what the NQTs wrote as part of their biographies. Beth, David and Edward all mentions aspects of self-efficacy in their biography before they considered it as part of the focus group dialogue. An example of this is from Beth's biography:

> 'Whilst training to be a teacher I have developed in many areas. One being my confidence [sic]. I have become more resilient in that I am determined to succeed in my teaching, taking on advice and targets… the biggest development has to be my confidence, especially when dealing with potentially difficulty situations and having the confidence to be the teacher I want to be'

The concept of self-efficacy will have to be explored further in my main research project.

A final strand of their perception of their own learning is the idea of continual learning. NQTs are afraid of becoming 'stagnant' in their learning and discuss learning as a process where they are building on that 'passion' and do not want to become 'the grumpy old man [sic] in the staff room'. A theme concurrent with all the participants is the desire to keep going and keep improving their practice through their own interpretations of learning and development. A useful end point to this section would be to quote Anne:

> *... I think developing is just part of life. I think you have to develop otherwise you stay in the same place and make the same mistakes...* (Anne)

RQ3. What activities affect secondary school teachers' learning and development?

The NQTs list many examples of how they learned. Many of these instances they drew directly from their practical experience in the classroom. In some cases they showed how formal (for example something from a staff training session) and informal (something they had learnt from a peer) became a real learning opportunity when applied to their practice. An interesting outcome was that some (in one case Edward and Beth) felt they learnt more from "bad" experiences (in this case observations) then more positive observations. The NQTs discuss the use of "others" to help them learn. This occurs either indirectly (for example working with their mentors) or directly (the talk about the teachers they have learnt from or, as in one example the way they learn from students).

Looking at Eraut's (2004) categories from section 2.2 it was easy to find examples of deliberate learning and reactive learning. It was much harder to see any examples of implicit learning; partly because of the tacit nature of this type of learning and partly because implicit learning is based on many experiences – something these participants have not had yet.

Another key activity that the NQTs discuss is the idea of reflection. In this example Carol (C), David (D) and Anne (A) discuss the historic use of their reflections whilst training

> *… at first it was a really big hardship oh I've got to write this reflective diary…*(Carol)
>
> *…yeah I have got to write five lines…so stupid…*(David)
>
> *… (in agreement with D…) yeah reflective logs(A– laughs) but now I think that even if I had a reflective like diary now for a week I think that would be really useful (A in agreement – mmm)…* (Carol)

Later the discussion develops into examples of where the participants had used reflection. Carol discussed the use of a remote camera in the classroom (IRIS) that she will use to 'help with our reflections' and later ' I think that reflecting with others is so much more useful'. Carol's ideas shaped the discussion which considered the use of other teachers in learning particularly to learn from others ideas or get different perspectives. Edward leads this back to reflection again where he uses the term reflection is a different context where he states that:

> *…I think as well like if someone else is reflecting on what you are doing they can be a bit harsher in their judgements I think I get to comfortable when I am reflecting as well and you notice it when you go through your PGCE and to teaching when there is no one else in the room that 'being reflective' just goes out the window…* (Edward)
>
> *…yeah, yeah…* (Anne, Beth)

Edward mentions reflection as a process by which one can stop it when no one is watching like it is an observable process. Anne comments on the use of reflection as a way of building self-confidence:

…it is a personal skill and so, er, learning to reflect I suppose and how to not to be too "soft" or "harsh" on yourself… (Anne)

The data suggests that reflection is a learning process that all the NQTs have had to engage in. It also corroborates the view of Convery (2001) where reflections are fruitful for learning when it is completed in a collaborative manner.

Summary of key points

The current analysis of the data demonstrates that the NQTs define learning in different ways. The recent experiences of training to be teachers have led the participants away from the training programme to developing their practice in areas they feel need expanding. The participants give the impression of being motivated to continue to learn and are conscious of the possibility of becoming stagnant in their practice.

They look for a variety of ways to learn and learn from many experiences. This includes applying the learning from formal workshops, working with their mentors to working informally with others.

Issues arising from the use of the focus group

The use of a focus group offered greater access to data as it collected data from participants simultaneously and systematically (Babbie, 2011). It did, however, offer less depth than a single interview (Morgan, 1995). Another feature of the focus group was the use of disagreements to 'encourage other participants to elucidate their point of view and to clarify why they think as they do' (Kitzinger, 1995, p301). This technique was used in situ which allowed participants to explore differences between their opinions which led to richer data.

There was an issue of reliance on interaction in the group to produce data (Morgan, 1995). Some participants dominated the conversation and those who were reticent were

not able to contribute in the detail they would have done if they had taken part in individual interviews (Morgan, 1995, Burgess et al, 2006).

Another issue, particularly when analysing the data, was consensus. Consensus, that is dialogic agreement, can be "true" consensus whereby the participants agree with each other (something that would be easier to see when comparing individual interviews) or it can be 'groupthink' (Boateng, 2012). "Groupthink" is described as a situation when the need for pragmatic alternatives is disregarded to be replaced with a contrived consensus to maintain group harmony (Boateng, 2012, p2). Consensus was evident in some places in the data and this was not clear whether it was true consensus, group think or based on disinterest on the part of the participants. The participants had to balance the tension of adding in something relevant to the conversation with attempting to give their own perception of their learning which may differ from the others. The cost of this to the data collected was the loss of individuality and uniqueness in participant responses (Turner and Pratkanis, 1998).

References relating to Appendix I

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